DEFENSE INDUSTRY BULLETIN

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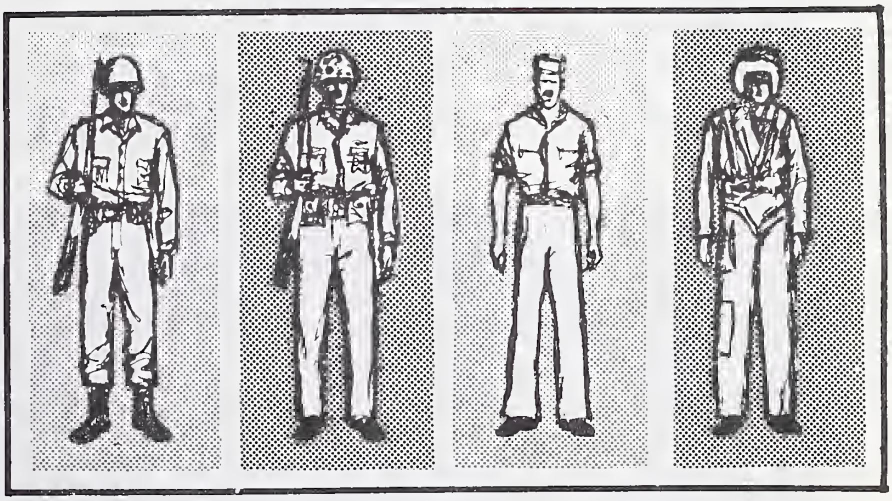
Defense Budget Highlights



Tanks, ships, aircraft, missiles, combat vehicles, small arms, ammunition, communications and electronics equipment, battlefield gear, and jungle boots are some of the items which will be funded by the FY 1967 budget appropriation.

This issue of the DEFENSE INDUSTRY BULLETIN is devoted almost entirely to Secretary of Defense Robert S. McNamara's Statement before a joint session of the Senate Armed Services Committee and the Senate Subcommittee on Department of Defense Appropriations on the Fiscal Year 1967–71 Defense Program and 1967 Defense Budget.

While space limitations permit only an abbreviated treatment of the statement, an attempt has been made to excerpt those portions which are of special interest to defense industry.

We hope this presentation of the annual posture statement will contribute to a more complete understanding by industry of the nation's defense needs.

The Editors.

Eight New Members Appointed to Defense Science Board

Eight new members have been appointed to the Defense Science Board, the senior technical advisory body in the Defense Department. It is composed of members appointed from civilian life and of members representing major Federal agencies.

The new members selected are:

Dr. Daniel Alpert, Dean of the Graduate College, University of Illinois, and a former member of the board.

Dr. Alexander Bravelas, Department of Psychology, Stanford University.

Dr. Eugene G. Fubini, Vice President, IBM Corp., and former Assistant Secretary of Defense.

Dr. Richard L. Garwin, Director of Applied Research, T. J. Watson Research Center.

Dr. Richard Latter, Rand Corp.

Dr. Thomas C. Schelling, Center for International Affairs, Harvard University.

Dr. Leonard S. Sheingold, Vice President for Advanced Technology, Sylvania Electronic Systems, and former Chief Scientist for the Air Force.

Dr. Robert L. Sproull, Vice President for Academic Affairs, Cornell University, and former Director of the Advanced Research Projects Agency.

In addition, the following have become members ex officio of the board:

Dr. Harold M. Agnew, Chairman, Army Scientific Advisory Panel.

Dr. Robert C. Seamans, Jr., Deputy Administrator, National Aeronautics and Space Administration.

Mr. Garrison Norton, Chairman, Naval Research Advisory Committee.

The Defense Science Board advises the Secretary of Defense, through the Director of Defense Research and Engineering, on scientific and technical matters of interest to the Defense Department.

Navy Schedules Systems Effectiveness Conference

The Navy's second Systems Effectiveness Conference (SPECON 2) will be held April 21–22 in the State Department's West Auditorium in Washington, D.C.

The conference is being sponsored by the Systems Performance Effectiveness Steering Committee of the Naval Material Support Establishment as a progress report to Government and industry on the development of both technology and management techniques.

Conference sessions will cover: requirements for increased management attention and effect of these requirements on both the Navy and industry; analytical techniques and methodologies for predicting, measuring and demonstrating systems effectiveness; and case history results from concept formulation and contract definition through development as regards systems effectiveness requirements upon project performance.

The first Systems Performance Effectiveness Conference, held last April, was limited to Navy civilian and military personnel with a few special guests. Based on the success of the first SPECON and to provide a progress report on systems performance efforts of the past year, both Government and industry representatives have been invited this year.

For information and program agenda contact: Mr. G. W. Neuman, Executive Secretary, SPE Steering Committee, Bureau of Ships, Code 361B, Washington, D.C. 20360.

DEFENSE INDUSTRY

BULLETIN

Published by the Department of Defense

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The *Defense Industry Bulletin* is published monthly by the Business & Labor Division, Directorate for Community Relations, Office of the Assistant Secretary of Defense (Public Affairs). Use of funds for printing this publication was approved by the Director of the Bureau of the Budget.

The purpose of the *Bulletin* is to serve as a means of communication between the Department of Defense (DOD) and its authorized agencies and defense contractors and other business interests. It will serve as a guide to industry concerning official policies, programs and projects, and will seek to stimulate thought by members of the defense-industry team in solving the problems that may arise in fulfilling the requirements of the DOD.

Material in the *Bulletin* is selected to supply pertinent unclassified data of interest to the business community. Suggestions from industry representatives for topics to be covered in future issues should be forwarded to the Business & Labor Division.

The *Bulletin* is distributed without charge each month to representatives of industry and to agencies of the Department of Defense, Army, Navy and Air Force. Requests for copies should be addressed to the Business & Labor Division, OASD(PA), Room 2E813, The Pentagon, Washington, D.C. 20301, telephone, OXford 5-2709.

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Defense Budget Highlights

Approach to the FY 1967-71 Program and the FY 1966-67 Budget

[*Following the method established last year in excerpting the FY 1966 budget statement in the DEFENSE INDUSTRY BULLETIN, paragraph markings have been deleted from the original text of the Secretary of Defense's posture statement for the sake of clarity. In addition some subheads have been added to assist the reader in locating individual programs and subjects.*]

As I have noted in previous appearances before this committee, President Kennedy gave me two general instructions when I took office in January 1961:

- Develop the military force structure necessary to support our foreign policy without regard to arbitrary budget ceilings.
- Procure and operate this force at the lowest possible cost.

During the entire five years of my tenure as Secretary of Defense, I have been guided by these two basic principles. Throughout that period I have insisted that our military strategy and plans should be related to the threat, that the forces to be acquired and maintained should be related to the strategy and the plans, and that the forces should be adequately supported, not only with men, equipment and facilities needed in peacetime, but with war reserve stocks as well, so that they could engage in combat for sustained periods of time.

The achievement of this objective has not been easy. For many years our military plans far exceeded the forces available to support them, and even the forces available were not in proper balance with one another. There was not enough tactical air power to support the existing number of Army divisions. In addition, although the concept of a mobile central reserve had been generally accepted, the airlift required to move these forces was completely inadequate, and there was not enough amphibious lift to move the Marine Corps forces. Although a great deal of attention had been paid to nuclear weapons, stocks of ammunition and other combat consumables required for non-nuclear war were grossly deficient in many categories.

Since 1960, we have added some $50 billion to our defense program to correct these deficiencies. By the end of FY 1965 we had achieved a:

- 45 percent increase in the number of combat-ready Army divisions.
- 45 percent increase in the number of combat helicopters.
- 100 percent increase in airlift capability.
- 51 percent increase in the number of Air Force fighter squadrons.
- 100 percent increase in naval ship construction to modernize our fleet.
- 1,000 percent increase in the Special Forces trained for counterinsurgency.

At the same time, we did not neglect our nuclear forces. Indeed, during this period we achieved a:

- 200 percent increase in the number of nuclear warheads and total megatonnage in the strategic alert forces.
- 67 percent increase in the number of tactical nuclear weapons in Western Europe.

But even while these increases in our military strength were being achieved, we moved forward vigorously on President Kennedy's second instruction, "Procure and operate this force at the lowest possible cost."

Each year since its inauguration in FY 1961, we have been able to increase the savings actually realized through our Cost Reduction Program and to increase its goals. In FY 1965, the last completed fiscal year, savings amounted to about $4.8 billion compared with $2.8 billion in FY 1964 and $1.4 billion in 1963. I can assure you that these savings were made without adverse effect on our military strength or combat readiness. Any doubt of this can only be based on a misunderstanding of the way in which we compute our requirements for forces, equipment and ammunition. As noted earlier, it has been my contention from the very beginning that we should first determine as accurately as possible what we need to support the forces required by our war plans; and then buy all of what we need, but only what we need, and buy at the lowest sound price.

In the case of both major equipment and consumables, we must acquire the items needed for the initial outfitting of the forces and for keeping their equipment modern, plus sufficient stocks to meet our peacetime needs, plus a war reserve sufficient to

Secretary of Defense Robert S. McNamara.

meet the logistic standards associated with our contingency war plans. All of these requirements are susceptible to calculation and there is nothing to be gained by buying more than we need at any particular time. Indeed, there is much to be lost since nearly all of these stocks are subject to obsolescence and many items actually deteriorate physically over time. Even under the best of circumstances, we have to dispose of billions of dollars of equipment and supplies each year, and at a mere fraction of their original cost. To the extent we buy more than we need, we simply increase the amount which eventually must be disposed of, thus wasting the taxpayers' money without adding anything of value to our actual military strength.

But the question still remains: Why, if we had acquired what we needed, do we have to increase our procurement so substantially in order to support our military effort in Southeast Asia? The answer to this question has three parts. First, we are increasing the size of our active forces because we do not wish at this time to call up the reserve forces. The new forces must be equipped and supplied.

Second, we do not normally provide in advance for combat attrition of such major weapon systems as aircraft and ships because of the great cost involved. I understand that a war reserve of aircraft was once considered in connection with the military buildup undertaken during the Korean War, but rejected for the same reason. Accordingly, additional aircraft must be procured as soon as the forces are committed to combat, and this was one of the largest items in our FY 1966 supplemental request.

Third, we provide in our war reserve stocks only those quantities of combat consumables needed to tide us over until additional stocks can be acquired from new production. This means that as soon as we start to consume significant quantities of war reserve stocks in combat, we must start to procure replacement stocks. For such items as ammunition, wartime consumption rates are many times peacetime rates. You will see when I discuss our ammunition requirements later in the statement, that it would be entirely impractical to attempt to carry in stock the huge amounts required when our forces actually engage in combat. And, there is no need to do so, as long as we have on hand the essential margin between consumption and production. This margin we have, except in those few cases where materiel is being used in Vietnam in ways and quantities which were never anticipated; for example, the 2.75 inch rocket now being fired in great quantities from helicopters.

This is not to say that every one of the tens of thousands of Defense Department supply points is without a single "inventory shortage." Anyone who has had experience with large supply systems knows that somewhere, something will be lacking. No matter how much we spend for defense, someone somewhere in our far flung organization will be short some item at any particular time. This has nothing to do with the amount of funds requested and appropriated. It simply reflects the fact that no system involving literally hundreds of thousands of people and millions of different items spread around the globe can be one hundred percent perfect. Mistakes in distribution or requirements calculations will be made, and these mistakes will be reflected in an inventory shortage, or overage, somewhere in this system. This is true of private industry as well as Government, and it is up to management at all levels to see to it that these mistakes are held to a minimum and corrected promptly when discovered.

U.S. Marines storm ashore near Da Nang.

Accordingly, the entire question of shortages must be viewed in perspective. The acid test of our logistics system is the ability of our forces to take the field and engage in combat. I submit that the rapid deployment and support in combat of a force of over one-quarter of a million men (including those aboard ships off the coast of Vietnam) to an area 10,000 miles from our shores clearly demonstrates that our logistic system has that capability. Never before has this country been able to field and support in combat so large a force in so short a time over so great a distance, without calling up the reserve and without applying price, wage and material controls to our civilian economy. That is why General Abrams, the Vice Chief of Staff of the Army, was able to say last June:

> "The Army is in the best peacetime condition in its history. I make this statement based on my experience as a battalion commander in Europe for 22 months beginning in 1949, and as commander of an armored cavalry regiment for 14 months thereafter, as a division commander in Europe from October 1960 to June 1962, and as corps commander from July 1963 to July 1964. From this background and from my association with soldiers and their equipment, I can state unequivocally that the readiness conditions in the U.S. Army are the highest that have been attained in my 29 years of service."

That is why the Secretary and Chief of Staff of the Army were able to report last August that:

> "The Army was never in a better position in peacetime than it is today—with respect to both training and equipment, it is fully prepared to carry out its mission of sustained land combat. From the point of view of materiel, this is the direct result of the significant equipment procurement and modernization program that has taken place over the past several years, and the provision of combat reserves in depth to enable our forces to engage in sustained combat."

That is why General Wheeler, the Chairman of the Joint Chiefs of Staff, was able to say last year about forces in Europe:

> "I have never known, historically or otherwise, of any Army in peacetime as well equipped, as well trained, as well manned as the Seventh Army today."

With regard to the preparation of the FY 1967-71 program and the FY 1966 supplemental and the FY 1967 budget, we have had to make a somewhat arbitrary assumption regarding the duration of the conflict in Southeast Asia. Since we have no way of knowing how long it will actually last, or how it will evolve, we have budgeted for combat operations through the end of June 1967. This means that if it later appears that the conflict will continue beyond that date, or if it should expand beyond the level assumed in our present plans, we will come back to the Congress with an additional FY 1967 request. If the conflict should end before that date or if rates of consumption are less than planned, we would, of course, have to adjust the programs downward. In either case, further changes in the FY 1967-71 program and the FY 1967 budget may occur.

This situation is not unlike that which existed four years ago when I appeared here in support of the FY 1963-67 program and the FY 1963 budget. At that time we were uncertain as to how the Berlin crisis would evolve and we assumed for budget purposes that the special measures associated with that crisis would terminate at the beginning of the next fiscal year. During most of the Korean War, it was assumed for budget purposes that the conflict would end before the beginning of the next fiscal year. And, when President Eisenhower in early 1953 extended this assumption to include the next fiscal year (FY 1954), the conflict ended in the first month of that year. So it is clear there is no "right" way to deal with this kind of problem. The essential point is that the planning assumptions underlying the FY 1966-67 budget requests should be clearly understood by all concerned.

Because of the large demands of our planned military operations in Southeast Asia, we have stretched out and deferred some programs which are not directly related to our near-term combat readiness. This is particularly true of the non-combat portion of the military construction program, e.g., the replacement of administration and school buildings, BOQ's, barracks, etc., not related to the support of our military operations in Southeast Asia. It is also true of the Family Housing construction program, where we have deferred the 8,500 units funded in FY 1966 for the time being and have not included any further request for new units in the FY 1967 budget. As you know, I have fought very hard for adequate military family housing, and this stretch-out should not be construed as a loss of interest on my part. It is simply the kind of program that can be deferred without adversely affecting our near-term combat readiness.

Needless to say, we are pursuing our Cost Reduction Program with renewed vigor. And, as you know, we have developed another list of base closings and consolidations. These actions have been very carefully reviewed by each of the Military Departments in the light of our requirements in Southeast Asia. They will in no way affect our combat capabilities in Southeast Asia or elsewhere.

By eliminating unneeded and marginal activities and deferring whatever can be safely deferred, I have been able to reduce the FY 1966 supplemental and FY 1967 budget requests of the Services and Defense Agencies by about $15½ billion, while at the same time providing for all essential military requirements.

We are requesting for FY 1966 a total of $63.3 billion in new obligational authority, of which $12.3 billion is in the Special Supplemental for Southeast Asia requirements, and $.9 billion is for the pay raises enacted last year. For FY 1967 we are requesting a total of $59.9 billion in new obligational authority. Expenditures for these two fiscal years are now estimated at $54.2 billion and $58.3 billion, respectively. . . .

Impact of the Defense Program on the Balance of Payments.

The persisting deficit in the U.S. international balance of payments and the contribution which our defense expenditures abroad make to that deficit continue to be of major concern. In CY 1964 the overall deficit was about $2.8 billion, with about $1.3 billion occurring in the last quarter of the year. However, as a result of the actions initiated by the President last February, we now expect that when final data are available for 1965, they will show a substantial improvement over 1964. For the first three quarters of 1965, the deficit ran at an annual rate of less than half of the 1964 figure. Further progress in reducing the deficit is anticipated this year as the recently announced, intensified program is implemented.

In the case of Defense, our objective is to reduce the net impact of our programs on the balance of payments, while maintaining all necessary combat capabilities and without creating undue hardships for the individual serviceman or his dependents. As shown in the table below, we have made substantial progress during the last few years in reducing the deficit on the "Defense" account.

Last year I stated that we hoped to reduce further the net adverse balance on the "Defense" account to an annual rate of about $1.4 billion. Despite increased overseas military expenditures associated with activities in Southeast Asia during the last half of the year, we were able to achieve that goal in FY 1965. The reduction since 1961 stems principally from increased receipts from military sales—a direct result of a greatly intensified effort in this area. During this period Defense foreign exchange expenditures were held relatively constant in spite of substantial wage and price increases overseas. For example, between 1961 and 1964, wage levels in France rose by 27 percent, in Germany by 30 percent and in Japan by about 33 percent; and they have continued to rise during the past year. While such increases help the relative competitive position of U.S. products in foreign markets and, hence, our balance of payments, for the Department of Defense they simply increase

($ Billions, Fiscal Years)

U.S. Defense Expenditures	1961	1962	1963	1964	1965
U.S. Forces and their Support	$2.5	$2.5	$2.5	$2.5	$2.5
Military Assistance	.3	.2	.3	.2	.2
Other (AEC, Etc.)	.3	.3	.2	.1	.1
TOTAL	$3.1	$3.0	$3.1	$2.9	$2.7
Receipts	– .3	– .9	–1.4	–1.2	–1.3
NET ADVERSE BALANCE	$2.8	$2.1	$1.7	$1.7	$1.4

the cost of our deployments overseas —between FY 1961 and 1965 these and other increases would have added about a half a billion dollars to our expenditures had they not been offset by such actions as the following:

- U.S.-produced supplies and services are generally favored whenever their cost, including transportation and handling, does not exceed the cost of foreign goods by more than 50 percent. Through FY 1965, about $250 million of such procurement was diverted to U.S. sources.

- Offshore procurement for the Military Assistance Program is generally limited to the fulfillment of commitments made in prior years. In FY 1965, foreign purchases of major items for MAP were approximately $65 million, little more than half the FY 1964 figure.

- In FY 1964 and FY 1965 we reduced the number of foreign nationals employed by the Department of Defense by approximately 35,000, about a 15 percent reduction during the two years. The staffs of U.S. military headquarters overseas were also reduced about 15 percent.

- We are adjusting our forces deployed abroad to changes in our own military capabilities and those of our allies, whenever possible. For example, during FY 1964 and 1965, we completed the phase out of the B-47 bomber force in Europe and the transfer of certain air defense responsibilities to the forces of Spain and Japan.

- We have eliminated all but the most essential overseas construction from our programs and are reducing the foreign exchange cost of those approved projects by requiring the use of U.S. construction contractors, U.S. flag carriers and U.S.-produced materials whenever practicable.

- We are closely scrutinizing the requirement for all existing overseas bases and facilities and are attempting through consolidation and inactivation to reduce their costs to a minimum. . . .

We also are making an intensified effort to maintain and, if possible, increase the level of receipts from military sales. Since the end of FY 1961, orders, commitments and options for over $9 billion of U.S. military equipment and services have been obtained. In addition to their balance of payments benefits, these sales make a positive contribution to the overall defense posture of the Free World by providing our allies with modern equipment at a cost far less than it would cost them to develop and produce it themselves. Moreover, these sales add to our own economic well-being. For example, they will provide almost $1 billion in profits to U.S. industry and over one million man-years of work to American labor.

Purchases by the Federal Republic of Germany under its military offset agreement remain the most significant in terms of total dollar amount. During the past year, however, we have consummated several other significant sales, most notably with Australia, Italy and the United Kingdom. Australia will purchase about $350 million worth of U.S. military goods and services over the next three years including C–130's, P–3's and S–2E's. Last December, arrangements also were completed with Italy for the coproduction and purchase of about $200 million of military equipment, including the all-weather F–104 aircraft. The United Kingdom during FY 1965 signed orders for nearly $500 million of U.S. equipment, including C–130 transports and F–4 fighter aircraft. In addition, the U.K. took options on additional F–4 and F–111 aircraft.

U.S. Air Force F–4C Aircraft.

Because of the size of its potential military procurements from the United States and their balance of payments affects, the United Kingdom has asked us to search out the types of military equipment we plan to buy for which British firms might compete. This would enable them to earn a part of the dollar exchange needed for their possible F–111 procurement from the United States. Early this year we expect to request bids from U.S. and U.K. firms for 11 small non-combatant ships having a total value in terms of foreign exchange of about $50 million. I think it should be clear to all that our future ability to negotiate additional sales programs will depend, at least in part, on our demonstrated willingness to make some reciprocal purchases where foreign equipment is competitive in price, quality and delivery schedules.

Presently, the outlook for Defense-related foreign exchange expenditures is clouded by the situation in Southeast Asia. While we are taking every reasonable measure to reduce their impact, our increased activities in that area will, indeed, result in higher balance of payment costs. Our tentative estimate is that such costs may increase by several hundred million dollars in FY 1966, solely because of Vietnam-related actions. If it were not for the measures we are taking, these costs could be much higher. For example, the bulk of the materials and equipment being used in our large construction program in Vietnam are coming from the United States. Also, we are increasing substantially the number of U.S. military construction battalions used for this work.

This set-back to our effort to reduce foreign exchange expenditures makes it even more important to find offsetting actions. To this end, we have again bolstered our sales effort, and I can assure the committee that we will continue to scrutinize very closely every overseas military activity and function which involves expenditures abroad.

Strategic Offensive and Defensive Forces

Included in this section are the two major programs which constitute our general nuclear war forces: the Strategic Offensive Forces and the Strategic Defensive Forces, including Civil Defense. Because of the close interrelationship and, indeed, the interaction of these components of our general nuclear war posture, it is essential that they be considered within a single analytical framework. Only then can the nature of the general nuclear war problem in all of its dimensions be fully grasped and the relative merits of available alternatives be properly evaluated.

The General Nuclear War Problem

Last year I pointed out that the general nuclear war forces should have two basic capabilities:

- To deter deliberate nuclear attack upon the United States and its allies by maintaining, continuously, a highly reliable ability to inflict an unacceptable degree of damage upon any single aggressor, or combination of aggressors, at any time during the course of a strategic nuclear exchange, even after absorbing a surprise first strike.

- In the event such a war nevertheless occurred, to limit damage to the population and industrial capacity.

The first of these capabilities we call Assured Destruction and the second Damage Limitation. . . .

Strategic Offensive Forces

The force structure proposed for the FY 1967–71 period is shown on the classified table provided to the Committee.

The Maintenance of an Effective Manned Bomber Force in the 1970's.

. . . We propose to phase out the B–52C–F's over the next five years and the B–58's in FY 1971, giving us a modernized force of 465 manned bombers (210 FB–111A's and 255 B–52G–H's) by the end of that fiscal year and at less than the cost which would result from maintenance of the older B–52's and the B–58's in the force. . . .

Although we still cannot see a clear need for a new strategic bomber to replace the B–52G–H's and FB–111's, we plan, as a hedge against some unforeseen improvement in Soviet anti-bomber defenses, to continue development work on the components and sub-systems which would be required if it should ultimately become desirable to deploy such an aircraft. Last year we proposed a four-part program for an advanced manned strategic aircraft (AMSA) which included work on alternative design approaches, the avionics, the propulsion system and the short range attack missile, SRAM. For the first three elements of this program we envisioned a 1966 effort costing $39 million—$24 million from prior year funds and $15 million from FY 1966 appropriations. In acting on our requests, the Congress added $7 million specifying that the total of $22 million provided in FY 1966 was to be available for AMSA. All of this additional $7 million has been applied to the program. Advanced development work on the airframe design and propulsion elements can be continued in FY 1967 with funds already on hand. The avionics development will require an additional $11 million in FY 1967.

Air Launched Missiles.

Last year we initiated development of SRAM as an element of the four part AMSA program. Now, given the decision to proceed with the procurement and deployment of the FB–111/SRAM system, this development program must be reoriented to the FB–111 schedule. The cost to complete the SRAM development program is now estimated at $170 million, including the related B–52 and FB–111 avionics. Some $8 million was provided in prior years; about $40 million will be needed in FY 1967.

Although we do not now plan to deploy SRAM on the B–52G–H's, we propose to undertake the necessary avionics development work to permit such a deployment if it should become desirable later. We would expect to keep the Hound Dog missiles in the operational inventory through FY 1970 on the same schedule as envisioned a year ago. However, in 1971, with the completion of the phase out of the B–52C–F's, the Hound Dog force would be phased down accordingly. We also propose to undertake engineering development and test of a new terminal guidance system for Hound Dog which gives promise of achieving a better overall system reliability. Total development cost is estimated at $20.5 million of which $6.6 million would be obtained by reprogramming presently available funds and $8.1 million is included in the FY 1967 budget. . . .

The cost of the manned bomber force we now propose, compared with the cost of continuing the current forces, is shown in the table below.

Strategic Reconnaissance.

The strategic reconnaissance force as shown on the classified table is essentially the same as that projected a year ago. All of these aircraft were procured in prior years.

Strategic Missile Forces.

Qualitative Improvements to the Minuteman Force. . . . We are now making certain further major improvements in the Minuteman which will so increase its performances as to warrant a new designation—Minuteman III. The initial procurement of this missile will be made in FY 1967.

We still plan to continue the 54 Titan II missiles in the force throughout the program period.

By the end of the current fiscal year, we expect that 32 Polaris submarines (512 missiles) will be op-

	FY 1967	FY 1971	FY 1975
Current Force Extended	(Costs in Billions of Dollars)		
Forces (# aircraft):			
B–52	600	600	600
B–58	80	70	64
Costs (Cumulative '67–)		$8.6	$17
Proposed Bomber Force			
Forces (# aircraft):			
B–52	600	255	255
B–58	80	0	0
FB–111	0	210	210
Costs (Cumulative '67–)		$8.4	$14

erational and, by the end of the 1st quarter of FY 1968, the entire planned force of 41 submarines (656 missiles) will be operational. The force will then consist of 13 SSBN's with A–2 missiles and 28 SSBN's with A–3 missiles. All five of the earlier A–1 boats will have been retrofitted to carry the A–3 missile. We also tentatively plan to modify four of the A–2 submarines during their first overhaul in the FY 1968-69 period to carry the A–3 missiles, in order to avoid the high unit costs which would be involved in restarting the A–2 missile production line (which closed down in June 1964) when present inventories are depleted by testing and training programs.

Accelerated Development of Poseidon. . . . it appears prudent at this time to place ourselves in a position to deploy a force of Poseidon missiles if this should be required. Last year we initiated project definition for this missile, using available 1965 funds, but the pace of the development was not precisely established. Now we propose an accelerated engineering development program for the Poseidon missile. The total cost of this development is estimated at about $1.3 billion, of which about $300 million will be needed in FY 1967. No decisions need be made now on the number of Polaris submarines to be ultimately retrofitted with Poseidon.

With respect to other future strategic missile systems, both the Air Force and the Navy have active study programs under way. The Air Force will continue work on several projects which would contribute to the development of an advanced ICBM, if one should be required at some time in the future. In total, some $10 million is required for FY 1967 for these projects. The Navy will conduct an advanced development study of improved propulsion systems for future sea-based missiles at a FY 1967 cost of $3 million.

Accelerated Development of Penetration Aids. . . . We have intensively studied a wide variety of penetration aid techniques and have invested a total of about $1.2 billion on research and development in this area. We now propose to carry this work forward on an accelerated basis, particularly with regard to the development of new penetration aids, which would be needed to defeat an area ABM defense employing exoatmospheric missiles.

Other Strategic Offensive Forces.

The other strategic forces are essentially the same as those programmed a year ago. With respect to the KC–135's, as the total size of the bomber force declines we intend to retain one tanker for each of the bombers. Most, if not all, of the remainder will be used to improve the air-to-air refueling capabilities of the tactical air forces. However, the specific re-allocation of these KC–135's will be made as they become available for reassignment.

With respect to the Post Attack Command and Control System (PACCS), a number of C–135's have been added to the force planned last year. These aircraft have previously been used principally as refueling tankers with a secondary mission as communications relay aircraft. In 1963, anticipating the time when we might no longer be sure of the survivability of our ground-based missile launch control facilities, we undertook the development of an airborne launch control capability for all of the Minuteman force. The development costs of the necessary equipment through FY 1967 is estimated at $18.6 million. We now propose to begin procurement of the airborne portion of this equipment in FY 1966 at a cost of approximately $22 million. The ground portion of the airborne launch control capability is included as an integral element of the Minuteman program.

Strategic Defensive Forces

The forces proposed for the FY 1967–70 period are shown in the classified table furnished to the committee.

The Overall Level of the Anti-Bomber Defense Program.

As I have pointed out in previous years, the elaborate defenses which we erected against the Soviet's bomber threat during the decade of the 1950's no longer retain their original importance. Today, with no defense against the major threat of Soviet ICBM's, our anti-bomber defenses alone would contribute very little to our Damage Limiting objective and their residual effectivenness after a major ICBM attack is highly problematical. For this reason we have been engaged over the past five years in a major restructuring of these defenses.

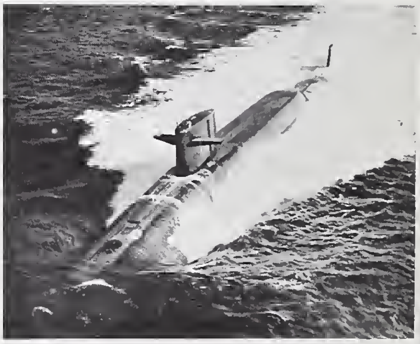
Surveillance, Warning and Control. Beginning in 1961, we have taken a number of steps to reorient the surveillance, warning and control system to a nuclear war environment in which an early surprise attack by ICBM's and SLBM's would be the most likely enemy tactic. These steps were designed to reduce the vulnerability of the system to such an attack and to bring its operating costs to a level more commensurate with the manned bomber threat as it has actually developed.

Semi-Automatic Ground Environment System (SAGE). Essentially soft, the SAGE system in 1961 was extremely vulnerable to missile attack. To provide immediate help, an interim manual backup interceptor control capability was established at 27 prime radar sites while work was initiated on a more effective backup system of 34 semi-automatic BUIC II stations co-located with prime radars. . . .

The first BUIC II's became operational last fall and all 14 of those now planned will be operational by April this year. In FY 1967 we will begin to modify certain of these stations to the BUIC III configuration, thereby causing a temporary drop to 12 operational stations at the end of that year. By the end of FY 1968, all BUIC II's will have been converted and by end FY 1969, the entire BUIC III deployment should be complete.

Radars. . . . We are continuing our program of internetting our radar system with that of the Federal Aviation Agency. . . . The Defense Department's share of this program is estimated at $22 million, of which $11 million was included in the FY 1966 budget, leaving $11 million to be provided in FY 1967.

Manned Interceptors. Last year, as part of the effort to restructure the Strategic Defensive Forces, we initiated a major phase down of the active fighter interceptor force, with the National Guard interceptor force remaining at about the current level but being progressively re-equipped with F–102's retired from the active force. This plan has now been projected through FY 1971 with no significant change. . . .



Polaris Submarine USS Sam Rayburn.

Surface-to-Air Missiles. With the exception of the Hercules, the surface-to-air missile forces are essentially the same as those projected a year ago. In the case of Nike-Hercules, we have decided to phase out 22 batteries deployed in defense of soft SAC bomber bases in the United States and Greenland. . . .

Qualitative Improvements to the Anti-Bomber Defense.

Production and Deployment of a New Manned Interceptor. Last year I pointed out that the single most important decision likely to face us over the next few years in the anti-bomber defense area is the production and deployment of a force of the advanced fighter-interceptor aircraft to replace those which we now have. Over the last 12 months we have intensively studied the desirability of procuring a force of F-12 type interceptors for the period beyond 1970. Although a substantial deployment of these aircraft would greatly increase the effectiveness of our anti-bomber defenses, its very great cost (about $6½ billion over the 1967-71 period) would be justified only if we were to decide to seek a very large and effective Damage Limiting program, and then only if the Soviets were to increase their bomber threat in both numbers and quality.

Accordingly, we propose to continue the YF–12A flight test program with the three aircraft now available. We have allocated $23 million to the YF–12A program in the current fiscal year, plus $5 million to the F-12 program for certain improvements in the ASG–18/AIM–47 fire control and missile system. For FY 1967, we are requesting $20 million for the YF–12A test program and $10 million for continuing the F–12 program. The ASG–18/AIM-47 system would be used on either the F–12 or F–111 interceptor. I believe that with either of these aircraft, we could proceed expeditiously with the deployment of a new interceptor later in this decade if that should prove necessary.

U.S. Air Force YF–12A.

If we decide to deploy a force of advanced interceptors, we would also wish to consider the simultaneous deployment of a highly survivable airborne warning and control system (AWACS) in the continental defense role. Moreover, an effective airborne interceptor control system would find important application in tactical situations. For these reasons, we initiated two years ago the study of such a system. Five million dollars were provided for FY 1966. We are now requesting $3 million for FY 1967 to undertake a contract definition phase for a development prototypes of the aircraft itself. A complementary program to develop the overland radar technology, which is critical to the successful development of AWACS, is funded at $9 million in FY 1966 and $12 million more is requested for FY 1967.

Improved Surface-to-Air Missiles. Our FY 1967 budget request provides for the continued development of improvements to the Hawk missile system with a view to decreasing its reaction time, speeding up its target-handling capability and improving its reliability. It also provides for the continued development of an advanced air defense system as a possible replacement for both Hawk and Hercules in the 1970's. This effort, now designated SAM-D, and the Hawk improvement program are also oriented to the theater air defense problem and will be discussed further in connection with the Army's General Purpose Forces.

Ballistic Missile Warning and Defense.

Defense against ballistic missiles, once they are launched from submarines or land bases, comprises the capabilities for detecting, tracking, intercepting and destroying the incoming warheads.

Ballistic Missile Early Warning System (BMEWS). . . . The modification of certain SAGE and Spacetrack radars on the East, West and Gulf Coasts to give them a limited detection capability against sea-launched ballistic missiles, which I mentioned last year, is progressing on schedule. The $19 million already programmed should essentially complete this program.

Over-the-Horizon Radar. Last year I described our development of an over-the-horizon radar system capable of the remote detection of missile launches. This development was undertaken to provide increased confidence in BMEWS warning, to extend the warning time itself and to prevent a Soviet "end run" of BMEWS. Through FY 1966, about $42 million has been programmed for over-the-horizon radars; and another $23 million is included in the FY 1967 budget.

The Character and Timing of a Deployment of ABM Defense. . . . In the coming fiscal year, we propose to carry forward this entire broadened Nike X development, test and evaluation effort, including the Sprint missile; the new, long-range exoatmospheric interceptor; the new family of radars; and the construction of test facilities. Some $447 million has been provided in our 1967 Budget request for this program. In addition, $119 million has been included for the related Defender program, which is concerned with vehicle re-entry measurements and analysis, advanced ABM techniques and devices and system studies.

With respect to the defense of hard point targets, we have had for some years a multi-pronged effort to develop the concepts and the components for an advanced weapon system. The two major elements of this effort are Hi-Bex—an extremely high acceleration missile interceptor — and Hapdar — a complementary phased array radar. These projects have already been funded, a number of interceptor tests have been made and the test just recently begun to operate. Over the next several months we will be studying and evaluating the data from these tests.

Anti-Satellite Defense.

Detection and tracking of foreign satellites is performed by the Space Detection and Tracking System (SPADATS). SPADATS acquires information from three separate sources: the Navy's SPASUR detection fence extending across the southern United States; the BMEWS screen accross the northern approaches; and Spacetrack, the worldwide network of radars and optical sensors. The principal investment now contemplated for SPADATS is the construction of a large phased array radar at Eglin Air Force Base.

We are also providing two large ground based optical installations for satellite tracking and photography. The one at Cloudcroft, New Mexico is already operational, and the other at Maui, Hawaii, will become operational shortly. . . .

Civil Defense

The last of the seven major issues involved in our FY 1967–71 general nuclear war program concerns the future size and scope of the Civil Defense program. Considering the great uncertainties regarding the other elements of the Damage Limiting program, I do not believe that we should undertake, at this time, any major change in our present civil defense effort. Therefore, with but one exception, the program I am recommending this year is essentially the same as the one approved by the Congress for FY 1966.

The principal innovation proposed for FY 1967 is a modest experimental program designed to stimulate the use of construction techniques in new public non-federal or privately owned buildings which would at little or no extra cost, provide dual-use fallout shelter space. . . . I believe that this experimental program is a sound and logical step in our overall civil defense effort, and I urge the committee's support of our $10 million budget request for this purpose. . . .

Shelter Survey.

. . . To continue all of these shelter survey activities, $23 million is requested in the FY 1967 budget.

Shelter Development.

. . . To date, pilot Community Shelter Plans are under way in 57 areas and plans will be started in 200 areas during the current year. For FY 1967, $4 million is requested to extend this planning effort to another 200 areas. . . .

. . . We propose in FY 1967 to continue our efforts to provide the necessary architectural and engineering advice to the construction industry, at a cost of about $3 million. . . .

Shelter in Federal Buildings.

No additional funds are requested this year specifically for Regional Emergency Operating Centers or for single purpose shelter space in Federal buildings. . . .

Shelter Provisions.

No funds are being requested for shelter supplies in FY 1967, except for $800,000 to be used for special protective packing for shelter supplies placed in mines, caves and tunnels and to initiate a quality check of shelter stocks already in shelters.

The balance of the $6.8 million shown for Shelter Provisions is for ventilation kits. . . . Procurement of a test quantity of 2,400 units is being made this year. The $6 million included in the FY 1967 budget would provide a sufficient number of kits to make habitable another 2.8 million shelter spaces at a cost of a little more than $2 per space.

Warning.

The $700,000 requested under this heading is to continue the development effort on a radio system for indoor warning.

Emergency Operations.

For FY 1967, $13.1 million is included for the Emergency Broadcast System, damage assessment, radiological defense, emergency operations systems development and technical support (primarily for communications and warning).

. . . About $1.4 million is included in the FY 1967 budget to complete the equipping of the remaining 59 stations and the related remote radio pick-up units.

Operation of the National Civil Defense Computer Facility and support of the damage assessment capability will require $1.5 million in FY 1967; and $6.7 million is needed for procurement of 1,000 aerial survey meters for monitoring radiological fallout, engineering improvement of radiological instruments, and for weather services, warehousing and radiological instrument maintenance and calibration.

The balance of $3.5 million is required for emergency operations systems development—i.e., the application of results of research, engineering tests and operations analyses to the solution of practical civil defense problems, and for communications advisory services and operation of the regional communications centers.

Financial Assistance to States.

. . . $30.5 million in matching funds are requested for FY 1967 for financial assistance to the States. . . .

Research and Development.

The $10 million requested for civil defense research and development will enable us to continue our efforts to obtain: fallout protection at lower costs per shelter space; better means of warning the population and of controlling and directing emergency operations in damaged areas; an improved technical base for post-attack survival and recuperation; and improved data on the countermeasures against all effects of nuclear weapons. . . .

Management.

For overall program management, $13.2 million is requested for FY 1967. . . .

Public Information.

The $4 million requested for FY 1967 is for the preparation of emergency information, instruction, dissemination of technical information and for programs to encourage the participation of industry in civil defense activities.

Training and Education.

The $15.6 million included under this heading will permit a continuation of the University Extension Program which provides professional civil defense training through the state university and "land-grant" college systems . . . adult education and rural education programs. The latter program provides instruction for farm families on how to protect themselves and their livestock against fallout.

Financial Summary

The Strategic Offensive Forces, the Strategic Defense Forces and the Civil Defense Program I have outlined will require Total Obligational Authority of $6.5 billion in FY 1967. A comparison with prior years is shown below:

($ Billions, Fiscal Years)

	1962 Orig.	1962 Final	1963 Act.	1964 Act.	1965 Act.	1966 Est.	1967 Prop.
Strategic Offensive Forces	7.6	8.9	8.3	7.3	5.3	5.1	5.1
Strategic Defensive Forces	2.2	2.0	1.8	1.9	1.5	1.6	1.3
Civil Defense	—	.3	.1	.1	.1	.1	.1
Total	9.8	11.2	10.2	9.3	6.9	6.8	6.5

General Purpose Forces

The General Purpose Forces include most of the Army's combat and combat support units, virtually all Navy units (except for the Polaris forces,), all Marine Corps units, and the tactical units of the Air Force. These are the forces upon which we rely for all military actions short of general nuclear war, i.e., limited war and counterinsurgency operations.

The Requirements for General Purpose Forces

Last year I discussed in some detail the nature of the limited war problem and our requirements for General Purpose Forces. I believe it would be useful, as a framework for your consideration of our present program proposals in this area, to summarize the main points of that discussion:

- The distinction between general nuclear war forces and limited war forces is somewhat arbitrary in that all of our forces would be employed in a general war, and certain elements of our strategic offensive-defensive forces could be employed in a limited war; and, indeed, we are today using some of our B-52 strategic bombers against the Viet Cong and North Vietnamese forces in South Vietnam. But it is primarily the limited war mission which shapes the size and character of the General Purpose Forces.

- The requirement for the bulk of these forces stems from this nation's commitment, in our own security interest, to the principle of collective defense of the Free World. . . .

- Forces must be provided for the direct defense of U.S. territories and vital interests, i.e., the protection of U.S. shipping on the high seas, the defense of the Canal Zone, Puerto Rico, etc.

- Each of these commitments could give rise to contingencies for which we must plan and provide military capabilities. We cannot hope to anticipate and be fully prepared for every conceivable contingency and, for that matter, neither can our opponents. Moreover, the likelihood of predicting contingencies in any degree of detail is, as we repeatedly discover, quite small. Accordingly, we must build into our General Purpose Forces a capability to deal with a very wide range of contingencies . . .

- Because of the close interrelationship between our forces and those of our allies in the collective defense of the Free World, it is in our own interest to help them support adequate forces wherever they cannot do the job alone. For this reason I have always considered Military Assistance an integral part of our own defense program.

- The ability to concentrate our military power rapidly in a threatened area can make a great difference in the size of the force ultimately required and, in some cases, can serve to halt aggression before it really gets started. That is why we have given a great deal of attention in recent years to the various ways of reducing our reaction time to limited war situations—airlift, sealift, prepositioning of materiel, etc.

- The currently planned expansion of our airlift, together with the improvement in our sealift and increases in prepositioned equipment, will enable us within a few years to move most of our central reserve of active ground forces overseas within 30 to 60 days. Thus, to be of maximum value in the kind of limited war situations we see ahead, the readiness of reserve components units should be brought to a level which would permit their deployment within that time.

Another aspect of the General Purpose Forces problem which I discussed with the Committee in considerable detail last year was the role of tactical nuclear weapons in a limited war in Europe. I pointed out that our studies in this area were still highly tentative, but that certain preliminary conclusions were warranted. Further study has advanced our understanding of this extremely difficult and complex problem, but our conclusions must still be considered tentative. . . .

With respect to the Far East, we must distinguish between the Soviet and Chinese communist threats. Our present nuclear predominance combined with a strong conventional defense posture in the area is now and should continue to be fully adequate to deter deliberate Soviet aggression, nuclear or non-nuclear.

The Chinese communists, however, will present a different kind of problem in the years ahead. The full implications of this new threat in the Far East are as yet far from clear, and the question of what our theater nuclear posture in the Far East should be in the future will require continuing study. In this connection, there is one lesson that we can draw from our experience in Europe, and that is to avoid a strategy which relies almost wholly on the use of tactical nuclear weapons to cope with the enemy's "massive" ground forces.

Capabilities of the Programmed Forces

As I noted earlier, our General Purpose Forces requirements are derived from analyses of contingencies, including the support of our allies around the world. Accordingly, our General Purpose Forces capabilities must be assessed in conjunction with the capabilities of these allied forces. Although we have considerable knowledge of the force plans of our allies, we cannot be sure how they will change with the passage of time. This creates some uncertainty about the specific requirements for U.S. forces in the more distant years of the five-year programming period, for which we must make allowances in our force planning.

The largest potential requirement for U.S. General Purpose Forces relates to a non-nuclear war in Europe. But the most immediate requirement today relates to our military effort in Southeast Asia. I believe it would be appropriate, therefore, to discuss the latter requirement first.

Southeast Asia.

. . . Now I would like to review with you the military aspects of the situation in Southeast Asia, our objectives there, and how we plan to achieve them.

We are dealing here with an immensely complicated problem, involving not only our immediate and longer range miltary objectives, but U.S. foreign policy and local political, economic and social considerations as well. While the military task in Vietnam is still largely a counterinsurgency effort, it is in many other respects a conventional limited war against external aggression. This is so because the communist aggression against South Vietnam is directed, controlled and supported by the government of North Vietnam, not only with men, materiel and money, but with its own regular military forces as well. Moreover, North Vietnam itself is receiving substantial materiel support (but, as yet, no combat forces) from Communist China and, indeed, is being pressured by that country to continue the conflict. North Vietnam is also receiving important materiel support from the Soviet Union, including ground-to-air missiles.

However, the struggle in South Vietnam has not only become a major test case of the communists' doctrine of the so-called "wars of national liberation," it has also become a test case between the Soviet and Chinese communist versions of that doctrine. As I pointed out earlier, according to Chinese communist doctrine, Vietnam is now the main focus of their campaign to subvert by violence independent nations in Asia, Latin America and Africa. The Soviet Union, apparently, would prefer to achieve the same goal by less violent means.

We must also take into account, in formulating our military objectives and operational plans for Vietnam, the unique character of that conflict. Since it is basically a war of terror and subversion, supported and directed from without, there are no established lines across which armies face armies with each side having well-defined, contiguous areas under its control. Instead, the territory of South Vietnam is controlled in varying degrees by the government and by the communists. Some areas are firmly under the control of the government, some under the control of the communists, and still other areas are controlled by neither side. This requires that our military efforts in South Vietnam consist of widely dispersed military operations directed at the scattered and changing areas of communist control.

As I noted in my appearance before this committee last August, the communists had apparently decided by early 1965 to make an all-out attempt to bring down the legitimate government of South Vietnam. The entire economic and social structure was brought under attack. Agricultural products were barred from the cities. Electric power plants and communications lines were systematically sabotaged. Whole villages were burned and their inhabitants driven away, increasing the refugee burden on the government of South Vietnam.

This onslaught has taken its toll. The economy of South Vietnam is, indeed, now in serious difficulty. The social structure has been disrupted and hundreds of thousands of people have to be resettled and given gainful employment. These problems cannot be solved by military means alone. Indeed, our economic aid effort at this time is at least as important as our military effort, not only in keeping South Vietnam viable as a nation but also in helping consolidate the gains of that military effort.

Policy Objectives and Military Tasks in Vietnam. Our overall policy objective in South Vietnam is a stable and independent government free of communist control. Our immediate objective is to force the communists to move the conflict from the battlefield to the conference table. The basic tasks which flow from these objectives are:

- To support the re-establishment of the authority of the government of South Vietnam over its territory.
- To exert pressure on the government of North Vietnam to cease its direction and support of the communist insurrection in South Vietnam.
- To deter Communist China from direct intervention in the conflict in South Vietnam and to defeat such intervention if it ocurs.

The following concept of military operations has been developed in collaboration with the South Vietnamese military command. The ground forces —United States, Korean, Australian, New Zealand, as well as South Vietnamese — will conduct four major types of operations which broadly overlap one another;

- "Search and destroy" operations, designed to destroy known or suspected communist forces and their base areas (supplies, communications and installations). These operations are not intended to seize and hold territory permanently.
- "Clear and secure" operations to eliminate, permanently, residual communist forces from specified limited areas. These operations are designed to hold territory and are undertaken only when it is considered possible to conduct, on a continuing basis, the full range of pacification measures required to secure the area.
- "Reserve reaction" operations designed to relieve provincial capitals and district towns under communist attack and to reinforce friendly forces when needed.
- Defense of government centers, including the protection of provincial capitals, district towns, key governmental facilities and installations.

The strike elements of the regular South Vietnamese forces, together with U.S. and other Free World forces (i.e., Korean and Australian/New Zealand) are concentracting on the first type of operation. The South Vietnamese forces, with some assistance from U.S. and other Free World forces, particularly in areas contiguous to their own bases, are assuming primary responsibility for the second type of operations. The third type is again primarily the responsibility of the South Vietnamese forces with such help as may be required from U.S. and other Free World forces. The fourth type is essentially the responsibility of the South Vietnamese forces.

I want to reiterate that the foregoing allocation of responsibilities is very general and, in actual practice, will vary according to the particular circumstances. A maximum degree of flexibility is needed to deal with the very fluid military situation which exists in South Vietnam.

The regular South Vietnamese ground forces are being assisted in the "clear and secure" and the "defense of government centers" operations by the "Regional" forces. The "Popular" forces are assisting at the village level in providing long-term security in areas already cleared by the regular combat forces and the "Regional" forces. The "Popular" forces are also participating in the pacification task. The re-establishment of normal governmental functions is primarily the responsibility of the civil authorities and the national police.

The air forces (USAF, USN, USMC and VNAF) are conducting close support air strike, suppressive fire, airlift and reconnaissance operations in support of the ground forces and reconnaissance and strike operations in support of the interdiction mission, including sea surveillance. Our concept of operations calls for a massive application of airpower in every form. This is also true in the case of artillery. In effect, we are trying to substitute, to the maximum extent feasible, the expenditure of materiel in place of the expenditure of our manpower. For example, in the case of ammunition, we have added to the $1.1 billion included in the original FY 1966 budget, $800 million from the August amendment and $2.1 billion from the FY 1966 supplemental—giving us a total of about $4.1 billion for ammunition in FY 1966. And, another $3.7 billion for ammunition is included in the FY 1967 budget. . . .

The Communist Forces in South Vietnam. When I appeared before this Committee last August in support of the Amendment to the FY 1966 Defense Budget, I said:

> "We now estimate the hard core Viet Cong strength at some 70,000 men, including a recently reported increase in the number of combat battalions. In addition, they have some 90,000 to 100,000 irregulars and some 30,000 in their political cadres, i.e., tax collectors, propagandists, etc. We have also identified at least three battalions of the regular North Vietnamese Army, and there are probably considerably more."

We now believe that the communists' military and paramilitary forces in South Vietnam total over 235,000 compared with the 190,000-200,000 estimated last summer. The communist hard core strength totals about 87,000, the irregulars number about 110,000, and the political cadres about 39,000. Within these totals, the confirmed North Vietnamese regular army forces in South Vietnam now number at least 11,000 men, and there are probably more.

The most significant increase during the last three or four months has been in the North Vietnamese forces; the Viet Cong forces appear to be increasing more slowly than heretofore. As I have noted on previous occasions, these trends were anticipated some time ago. The heavy losses suffered by the Viet Cong during the last six months have made it very difficult for them to raise their strength and the communists have been forced increasingly to rely on the regular North Vietnamese Army in their attempt to match our buildup. For example, during the last half of 1965, Viet Cong combat deaths reached an annual rate at about 47,100 compared with about 16,800 for 1964. Viet Cong captured during this period rose to an annual rate of about 7,300 compared with about 4,200 for 1964 while the rate of known Viet Cong defectors rose to about 12,500 compared with 1,900 in 1964.

We must assume that the number of North Vietnamese regular army troops in South Vietnam will continue to increase substantially in the months ahead as we step up our attacks on the communists' main forces and work to expand the government's control over the population and territory of South Vietnam, thus further limiting their potential sources of supply for indigenous military manpower.

With regard to logistic support, the Viet Cong itself apparently depends upon internal sources for almost all "non-military" supplies, particularly food, clothing and construction materials. It appears that they produce mines and grenades and purchase clandestinely in South Vietnam such items as medicine, storage batteries and other civilian-type goods. But both the Viet Cong and North Vietnamese forces in South Vietnam are becoming increasingly dependent upon external sources of supply (for arms and ammunition, communications equipment, bulk medical supplies, etc.). Particularly important are the 7.62mm rifles and machine guns, grenade launchers, recoilless guns and mortars, and their ammunition. Much of these arms and ammunition is of Communist Chinese manufacture but some of it has been made in the USSR or in Czechoslovakia.

The supply lines from North Vietnam through Laos and South Vietnam are well known, although they are very difficult to interdict. Not so well understood is the source of supplies coming from Cambodia. The borders are so inadequately policed that it is probable the communists are able to infiltrate supplies and troops through that country, both south from Laos and north from the sea. The increasing effectiveness of our sea surveillance leads us to believe that less of the supplies are coming in to South Vietnam directly by sea. . . .

Army General Purpose Forces

During the past year, we have made a number of decisions which affect the size and composition of the Army General Purpose Forces proposed for the FY 1967–71 period.

As you will remember, we conducted a series of field tests during FY 1963 and FY 1964 of new air mobility concepts. Last March, the JCS completed their analysis of these test results, and, in June, on the basis of the JCS recommendations, I authorized the Army to proceed with the organization of a new airmobile division, using the resources of the 2nd Infantry Division and the provisional 11th Air Assault Division which had been temporarily established for the tests. Shortly after forming up last summer, this division was deployed to Vietnam. Completely air-transportable, it has 434 organic aircraft, more than four times the number authorized in a regular infantry division. These aircraft, almost all of which are helicopters, provide such an improvement in mobility and reaction time that entirely new tactics have become possible. On the basis of this division's performance in South Vietnam, we are planning on the conversion of one additional division to the airmobile configuration. Funds have been included in the FY 1966–67 budget to initiate the procurement of long lead time equipment required for this purpose. A date for the conversion has yet to be determined. . . .

Army Procurement.

As I indicated at the beginning of this statement, we have made very heavy investments in Army procurement since FY 1961. Nevertheless, because of the projected consumption in Southeast Asia and the previously discussed force augmentations, the Army procurement programs which we now recommend for FY 1966 and FY 1967 are the largest since the Korean War.

Our present logistics guidance provides that the Army will procure initial equipment for 26⅓ division force equivalents including the 16 permanent and one temporary active division forces, the eight priority reserve forces, four brigade forces and all the related combat, combat support and logistics support units. . . .

Essentially, the FY 1966–67 procurement programs proposed for the Army have been developed to provide for all projected combat consumption in Southeast Asia and to meet in full our war reserve inventory objectives in accordance with the logistic standards just described. The revised FY 1966 program now totals $5,045 million, of which $2,465 million is included in the supplemental request. The FY 1967 program totals $3,561 million. But, again, I want to remind you that for purposes of developing our FY 1966–67 budget requests we have assumed that combat operations in Southeast Asia will continue through June 30, 1967. If it later appears that combat will continue beyond that date, more funds will be needed for FY 1967.

Aircraft. . . . The FY 1966 program now totals $1,333 million for 3,044 aircraft, of which $826 million is included in the supplemental request. The FY 1967 request includes $593 million for 1,532 aircraft.

The largest single aircraft item is the UH–1B/D helicopter, of which we propose to procure very large numbers in both FY 1966 and FY 1967.

We also propose to raise the production rate of CH–47A's in order to speed up the achievement of the inventory objective and provide for projected attrition. The quantities of these transport helicopters proposed in the FY 1966 and FY 1967 requests will satisfy almost all of the Army's total procurement requirement.

The proposed purchases of LOH–6A's in FY 1966 and FY 1967 will permit a stepped up modernization of the observation aircraft inventory.

The FY 1966 supplemental request includes funds for the first operational quantity of CH–54A heavy lift

U.S. Army CH–54A Heavy Lift Helicopter.

helicopters and more are included in the FY 1967 budget request. . . .

We also propose to procure some fixed-wing utility aircraft in FY 1966, as well as a substantial number of trainer aircraft to meet the expanded pilot training requirements of the Army. At this time, no further trainer aircraft procurement is contemplated for FY 1967.

Missiles. Army missile procurement (including spares) will total $369 million in FY 1966 ($64 million in the supplemental request) and $357 million in FY 1967.

The current year's procurement of Pershing missiles will complete the presently planned inventory requirements and provide for training consumption. Funds are included in the FY 1967 budget to finance the procurement of improved ground support equipment.

For Lance, $19 million of available funds will be used in FY 1966 for production tooling and advance production engineering. In FY 1967, we propose to procure a substantial number of the missiles and the associated ground support equipment.

The revised FY 1966 program for Shillelagh includes a large purchase of missiles and the FY 1967 request includes an even greater quantity. . . .

For Redeye, the man-transportable, shoulder-fired air defense missile, the revised FY 1966 program provides for a major purchase of missiles, and the FY 1967 request includes a large additional quantity. These procurements will meet the present tactical inventory objective and provide for training consumption.

The funds requested for Hawk in FY 1967 will provide the necessary ground support equipment for the previously discussed conversion of Hawk battalions to the self-propelled configuration, advance production engineering for the Improved Hawk missile, and modified fire control equipment designed to increase Hawk effectiveness.

The FY 1967 request includes $62 million for the Chaparral missile system. This amount will provide for the procurement of a large quantity of missiles, the self-propelled and towed fire units, and equipment for training and testing the Chaparral.

Weapons and Combat Vehicles. The revised FY 1966 program for weapons and combat vehicles totals $521 million, of which $181 million is included in the FY 1966 supplemental. For FY 1967, $428 million is requested.

As part of the stepped-up program to improve the Army's forward area air defense capability, we are buying this year the first increment of self-propelled Vulcan M–61A 20mm antiaircraft guns to complement the capability of the Chaparral missile. . . . The funds requested for FY 1967 will provide for procurement of more guns together with fire control equipment for both the FY 1966 and FY 1967 programs.

We have also included funds in the FY 1967 budget for the second increment of the Hispano Suiza 20mm guns, as part of the program to upgrade the firepower of our M–114 armored command and reconnaissance vehicle which presently mounts a 50 cal. machine gun. The required quantity of this gun is being procured over a three-year period.

The FY 1967 program includes a substantial number of self-propelled 155mm howitzers and M–578 light recovery vehicles. The 155mm howitzers are replacing the 105mm weapons.

Included also is the second increment of General Sheridan armored reconnaissance and airborne assault vehicles.

During FY 1967, we plan to maintain a production rate of the basic M–113 chassis sufficient to meet the combined requirements for the self-propelled 81mm mortar carriers and the XM–548 cargo carriers, both of which use this chassis.

The proposed FY 1967 program provides for the continued modernization of the Army's tank inventory. We now plan to retrofit large numbers of M–48 medium tanks with new diesel engines and 105mm guns, and procure a number of new M–60's equipped with the Shillelagh/152mm gun. Together with a small number of armored vehicle bridges and combat engineer vehicles which use the same chassis, the planned M–60 tank procurement will support the minimum sustaining monthly production rate.

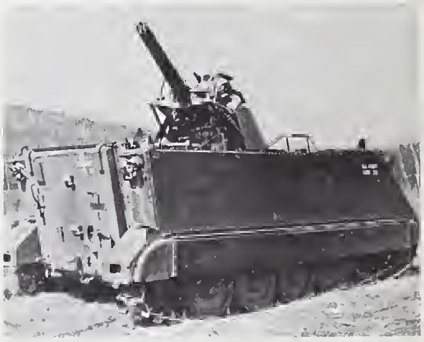
We presently have under joint development with the Federal Republic of Germany the Main Battle Tank, now scheduled for introduction into the operational inventory in the early 1970's. In FY 1967, we are requesting $10 million for advance production engineering. (Funds are also included in the R&D program to support the U.S. share of this development.)

Tactical and Support Vehicles. The FY 1966 program for the trucks, trailers and other non-combat vehicles now totals $608 million, of which $253 million is included in the supplemental request. For FY 1967, $526 million is requested for such vehicles, including ¼-ton trucks, ¾-ton trucks, and 1¼-ton trucks, 2½-ton trucks and 5-ton vehicles of various types. Included in the 1¼-ton truck procurement is the Gamma Goat (XM561) vehicle which is composed of a separate tractor and powered trailer, joined together to improve off-road mobility. . . . We propose to buy the first increment of these vehicles in FY 1967.

Communications and Electronics. For communications and electronics procurement, the FY 1967 budget request includes $293 million. The revised FY 1966 program now totals $450 million of which $241 million is included in the supplemental request.

Lance Ballistic Missile.

Chaparral Launch Vehicle.



20mm Vulcan Weapon System.

The FY 1967 program includes another major purchase of AN/VRC-12 vehicular radios, and the initiation of procurement of some of the radio relay equipment for the Army Area Communications System (AACOMS).

Ammunition. For ammunition, the Army's revised FY 1966 program includes $1,278 million, of which $671 million is included in the supplemental. For FY 1967, $1,052 million is requested.

A large procurement of small arms ammunition (5.56mm and 7.62mm cartridges) is proposed for the current fiscal year to meet projected Southeast Asia consumption. The quantities requested for FY 1967 will fully meet the inventory objective for these items.

We propose to make large purchases of both 20mm and 40mm ammunition in FY 1966. In both FY 1966 and FY 1967 we will procure 20mm ammo for the Vulcan air defense gun and for the Hispano-Suiza gun mounted on the M-114 armored command and reconnaissance vehicle. All of the 40mm ammunition proposed for FY 1966 and FY 1967 are cartridges used with the M-79 grenade launcher and a rapid fire helicopter-mounted version widely employed in Vietnam. Funds are also included in FY 1967 for a new anti-aircraft fuze. This fuze will be fitted on existing 40mm ammo to be used by the "Duster" anti-aircraft units which we are reactivating. . . .

Similarly, most of the large increase in 81mm, 105mm, 106mm, and 4.2 inch cartridges and in 2.75 inch rockets is related to Southeast Asia requirements. The increase in procurement of 152mm ammunition is to build up initial inventories for the new Shillealagh/gun turret on the M-60 tanks and for the gun/launcher on the General Sheridan vehicle. The larger quantities of 155mm ammunition are required to keep pace with the growing inventory of 155mm self-propelled howitzers as well as to provide for increased consumption in Vietnam.

Other Support Equipment. The revised FY 1966 program for other support equipment totals $312 million, of which $195 million is included in the supplemental request. These funds are required for such items as electric field generators, road graders, cranes, tractors, bridge components, shop equipment, fork lift trucks, etc. For FY 1967, $262 million is requested.

Production Base Program. The revised FY 1966 program for production base support totals $174 million, of which $34 million is included in the supplemental request. For FY 1967, $50 million is requested.

Navy General Purpose Forces

Except for the Vietnam augmentations, the major changes in the Navy General Purpose Forces proposed for the FY 1966–71 period from the program envisioned last year concern the attack carriers and their air wings, the anti-submarine warfare forces and the guided missile destroyers.

Attack Carrier Forces.

In my appearance here last year in support of the FY 1966-70 program and FY 1966 Budget, I discussed a plan which would have reduced the attack carrier forces to 13 ships and 13 air wings by the early 1970's. A reduction of this order was considered appropriate for several reasons: the introduction of far more effective ships and aircraft into the Fleet, the release of the attack carriers from the strategic alert mission, and the overall increase in quantity, range and effectiveness of land-based tactical air power generally. Since that time a plan has been developed for the attack carrier forces which I believe is superior to the one discussed last year. Under the new plan, the number of ships would be held at 15 but the number of air wings would be reduced to 12—an increase of two ships and a reduction of one air wing compared with the previous plan. Significantly more useable combat power could be obtained from a force of 15 carriers and 12 air wings than from a force of 13 carriers and 13 air wings, and at no increase in cost. . . .

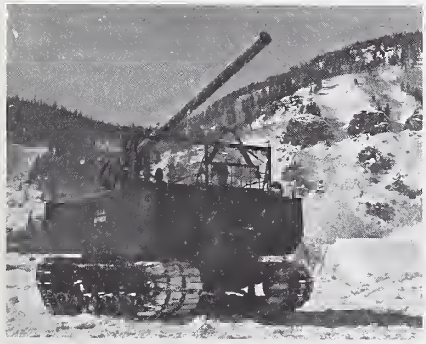
Ships . . . To provide for the progressive modernization of the attack carrier force, we have included funds for the construction of a new nuclear-powered attack carrier in our FY 1967 request. When this ship is delivered to the Fleet, we will have ten large carriers and three of the Midway-class. Now that we plan to retain a force of 15 carriers, two more new carriers will have to be provided, and these have been tentatively scheduled for later years. These, also, would be nuclear-powered. As these ships are delivered to the Fleet, the Essex-class carriers will be retired from the CVA force which would then consist of four nuclear-powered, eight Forrestal-class and three Midway-class carriers, for a total of 15.

Carrier Aircraft. Approximately 80 percent of the total air complement of the attack carrier forces is currently organized into 15 carrier air wings; the remaining 20 percent is made up of aircraft used for combat readiness training. The decline in the total number of fighters after FY 1967 reflects two factors—the reduction from 15 to 12 wings and the substitution of the F-111B's for other aircraft on less than a one-for-one basis when these aircraft become operational. As I noted in previous years, the F-111B promises a substantial increase in effectiveness over the F-4, the Navy's current first-line fighter. Eventually, the fighter force will consist of F-111B's, F-4's and F-8's. The F-8's are retained for the Essex-class carrier which cannot effectively operate the F-4's or F-111B's. The attack aircraft complement will consist of A-6's, A-4's and A-7's.

In the reconnaissance/ECM area, a new aircraft, the EA-6B will be introduced into the force. It will be far more capable than the EA-1F which it will replace. We will also continue the conversion of the A-5A's to the RA-5C configuration for use on the Forrestal-class carriers. The RF-8's will continue to be used on the Essex-class and Midway-class carriers.

ASW-Surveillance and Ocean Patrol Forces.

Last year I pointed out that the preliminary findings of a Navy study indicated that we were, generally, in better shape with regard to the submarine threat than we had previously thought, but that a continued high level of ASW research and development would be needed to hedge against the possibility of a more sophisticated threat in the future.



105mm Recoilless Rifle.

The XM 3 2.75" Rocket Launcher.

ASW Carriers (CVS). At the end of FY 1965, we had nine Essex-class CVS's, all but one of which had "angled" decks. The one "straight deck" carrier is less capable than the others and, because of the adequacy of our overall ASW capability, we have decided to phase it out of the force during the current fiscal year, with a reduction in annual operating costs of about $22 million. This will leave eight CVS's in the Fleet, four for the Atlantic and four for the Pacific, plus one training carrier in the Atlantic. . . .

The ASW carrier forces will continue to be equipped with both fixed-wing aircraft and helicopters. The older SH–34 helicopters have already been replaced with the new SH–3A/D. The older S-2's are being replaced by the S-2E's. As I noted last year, we are also providing a few A-4's for each CVS in order to give them a limited intercept and air defense capability. . . .

Attack Submarine Forces. By the end of the current fiscal year, the submarine force, excluding Polaris, will number 105 ships, 24 of which will be nuclear powered. While last year's program called for 31 nuclear-powered submarines to be in the force by this July, the Submarine Safety Program has resulted in some slippage. However, by end FY 1967 this slippage should be made up and we will be back on schedule.

Our continuing study of the ASW problem indicated that a total of about 64 first class SSN's will be needed. A total of 50 SSN's were funded through FY 1965, one of which, the Thresher, was lost. Two nuclear-powered submarines (one radar picket and one Regulus equipped SSN) were reassigned to the SSN role, making a total of 51 available. These two submarines and the two earliest SSN's are not deemed suitable for certain types of operations, leaving 47 available for missions requiring first class SSN's. Six SSN's were provided by the Congress in FY 1966, leaving a total of 11 SSN's to be funded in FY 1967 and subsequent years. We propose to start five SSN's in FY 1967 and the remainder in future years. This program will give us a total of 64 first class SSN's, plus four other SSN's which could be used together with the conventionally powered submarines for other missions. . . .

Sonar improvements will be made on almost all of the earlier SSN's to bring them up to the standard's of the latest SSN's. About $33 million has been included in the FY 1967 budget to start this program.

Destroyer Escorts. . . . Our currently planned construction program for destroyer escorts is the same as I described a year ago, and another 10 DE's have been included in the FY 1967 budget. Beginning with the ships funded in the FY 1964 program, all of the destroyer escorts now being built will be equipped with the new SQS-26 sonar, a highly effective system for submarine detection. Most of the earlier DE's and a large number of DD's, DDG's, and CG's (a total of 160 ships in all) will be equipped with the improved SQS–23 sonar. This improvement will significantly enhance their submarine detection and classification capabilities. About $14 million of available funds has been programmed for this purpose in FY 1966, and approximately $14 million more has been included in the FY 1967 budget request.

We also plan to continue our program to improve the ASW capabilities of 13 DD–931 class destroyers, all of which are less than ten years old. These ships will be provided with ASROC (including the Underwater Battery Fire Control System), improved communications equipment, a new variable depth sonar and improved ECM capabilities, plus certain minor structural modifications—at a cost of about $12 million each. With these improvements, the DD–931 class destroyers will be comparable to and, in some ways, even better in the ASW role than the DE's we are now building at a cost of about $29 million each. Five conversions were funded in FY 1966. Five more are included in the FY 1967 Budget. . . .

Small Patrol Ships. The program authorized through FY 1966 will provide a total of 33 small patrol craft by FY 1969. No further increases in these types of vessels are being proposed. However, as I indicated in my appearance before this committee in August, we have greatly increased the procurement of the smaller Swift craft, which are not included in the Small Patrol Ship category. These craft are designed for very close-in coastal search and surveillance. In addition, we are procuring a large number of river patrol craft (small water jet boats) financed by reprogramming about $9 million of available funds.

Patrol Aircraft. As I indicated last year, we plan to maintain a force of 30 squadrons of ASW patrol aircraft, three squadrons of seaplanes (SP-5's) and 27 squadrons of land-based aircraft (SP-2's and P-3's). Eventually, all of the SP-2's will be replaced by P-3's. Beginning with the FY 1968 buy, we plan that all new P-3 aircraft will be equipped with a new avionics system (A-NEW) at a cost of about $1 million per aircraft. . . .

Multi-Purpose Ships

We have grouped in this category those ships which possess capabilities for both anti-submarine warfare and Fleet air defense. There will be 265 such ships in the Fleet at the end of the current fiscal year, the bulk of them destroyer types. Many of these ships will have a guided missile capability.

Last year I described the four part program which we were undertaking to improve the air defense capabilities of the Fleet: (1) the Tartar-Terrier-Talos "Get Well" program, designed to correct deficiencies in missile ships already built or under construction; (2) the SAM (Surface-to-Air Missile) improvement program, designed to develop a new and more effective "Standardized" missile for use on both the Tartar and Terrier launchers and to provide for the incorporation of other improvements in these systems; (3) the Advanced Surface Missile System (ASMS), designed to provide Fleet air defense for the 1970's; and (4) the Guided Missile Ship Modernization/Conversion program, designed to improve the air defense capabilities of 22 existing guided missile ships.

Funding for the "Get Well" program has been substantially completed. Necessary hardware is being procured and installed The SAM improvement program is now well under

Aircraft Carrier USS America.

SH–3A Sea King Helicopters.

way. A substantial number of the "Standardized" missiles are being procured in FY 1966 (half medium and half extended range) for test, evaluation and documentation. . . .

. . . We, therefore, propose to start two new guided missile destroyers in FY 1967, at a total cost of about $145 million. . . .

In addition to these two new ships, we would also continue the Guided Missile Modernization / Conversion program which I described to you last year. Under this program, four cruisers and 18 frigates would be converted or modernized during the FY 1966-70 period, at a total cost of about $600 million. Three of these ships were funded in the 1966 program and six more (one cruiser and five frigates) are included in the FY 1967 budget. During the period of actual conversion/modernization, these ships are not considered operationally deployable, which accounts for the slight decline in guided missile ships in the FY 1968-70 period.

We are also studying the feasibility of providing a "close in" defense system for combat ships to augment their existing air defense capability. . . . Provision has been made in the FY 1967 budget of this Point Defense Surface Missile System. . . .

Amphibious Assault Ships.

Two years ago I presented a program designed to provide a modernized (20 knot) amphibious lift for 1½ Marine Corps Division/Wing teams by FY 1972 plus sufficient older ships to provide a slower lift for another half of a Division/Wing team. This program, as adjusted last year, involved the construction of a large number of new ships during the FY 1965–69 period. Our goal was to build toward a capability to land about one-third of the assault troops by helicopter, one-third by amphibian vehicles and one-third by either helicopter or landing craft, whatever the specific situation might dictate.

However, further study of this program has convinced us that some modification is desirable. The Navy is now investigating the possibility of designing a multi-purpose amphibious ship which could combine the features of several of the current specialized types. Accordingly, we have rescheduled the entire program, first, to provide time to develop a new ship design and, second, to accelerate the construction of the types most needed now. Under the program now proposed, 12 ships (11 LST's and one LSD) would be started in FY 1967 at a cost of $306 million.

As I noted last year, we are reactivating four "fire support" ships from the reserve fleet during FY 1966 —three Medium Landing Ships, Rocket (LSMR) and one Inshore Fire Support Ship (IFS). We are also retaining in the Fleet two heavy gun cruisers which had previously been scheduled for deactivation in FY 1967–68. We believe that these forces will be sufficient to provide the ship-to-shore fire support required under present conditions.

Mine Warfare Forces

. . . Five new minesweepers (MSO) will be started in FY 1967 at a cost of $43 million. These new ships will replace the older minesweepers (MSC) which will phase into our Naval Reserve Training Fleet to replace still older ships and expand that force.

We are now accelerating the helicopter minesweeping program which I mentioned last year and have begun procurement of the sweep equipment. We plan to provide this emergency minesweeping capability for a substantial number of Marine Corps vertical assault helicopters (CH–53A's). During FY 1967 we propose to reconfigure some of these helicopters to accept the sweep equipment. The equipment will be stowed aboard the helicopter assault carriers where it can be quickly installed in the aircraft as needed. This element of the minesweeping program will give us, at a modest cost, a significantly augmented minesweeping capability for certain types of operations. We also tentatively plan to procure additional helicopters with this emergency sweep capability for use aboard mine countermeasure support ships now planned for procurement in future years.

Destroyer Escort USS Garcia.

LST USS Washtenaw County.

Logistical, Operational Support and Direct Support Ships

We presently plan on a force of about 168 logistical and operational support ships at the end of the current fiscal year, slightly more than scheduled a year ago. Because of increased requirements related to Southeast Asia, we have activated eight of these fleet support ships from the Reserve Fleet.

For the future, I believe that the number of these fleet support ships can be reduced as faster and larger ships are constructed and delivered. Last year we had tentatively scheduled the construction of 14 ships in FY 1967. However, with all icebreakers being transferred to Coast Guard jurisdiction, the one scheduled for construction in the FY 1967 program has been dropped. We also have deferred procurement of two auxiliary tugs (ATA's) and a fast combat support ship (AOE). A hydrofoil countermeasures ship (AGHS) has been deferred to permit completion of the testing of the experimental version. Construction of a small replenishment tanker has been also rescheduled to a future year. Accordingly, the FY 1967 program now includes eight fleet support ships: two ammunition, one combat stores, two replenishment fleet oilers, two salvage tugs and one fleet ocean tug.

Other Navy Aircraft

The Navy will gradually reduce the number of Fleet Tactical Support Aircraft during the FY 1967-71 period, as more capable aircraft enter the force. . . . We will continue our program for modernizing the "carrier-on board delivery" aircraft force, replacing older C-1's in the Fleet Tactical Support Squadrons with the more capable C-2's. Each of the 15 CVA's and eight CVS's will continue to have one C-1 directly assigned to it.

Marine Corps Forces

During the FY 1966-67 period Marine Corps active duty strength will be increased to about 278,000, compared with 190,000 at the end of FY 1965. As I noted earlier, one division and several supporting units have been added as part of the temporary Vietnam augmentation. And, as I pointed out earlier, the reserve division/aircraft wing team is being provided additional personnel to increase its readiness for quick deployment.

At the end of the current fiscal year, the three active Marine aircraft wings will have about 1,200 combat and combat support aircraft. Over the next few years all of the older fighters will be replaced by F-4's armed with Sidewinder and Sparrow air-to-air missiles. The Marine Corps attack aircraft capability will continue to be improved with all weather A-6 aircraft replacing visual attack A-4's.

Although the number of reconnaissance and countermeasure aircraft will remain level, the overall capability will increase significantly as a new and much more effective countermeasure aircraft, the EA-6B, is introduced to replace the older and less effective EF-10B.

The tanker-transport forces are about the same as I presented last year. With respect to helicopters, some temporary transport squadrons will be added in FY 1967, and beginning in that year, the older CH-37's and UH-34's will be replaced with new CH-53's and CH-46's at a faster rate than contemplated last year in order to provide for combat attrition in Vietnam and free additional aircraft to equip the reserve aircraft wing. The number of light helicopter/observation aircraft will increase in FY 1967, reflecting the activation of two new squadrons and the introduction of the OV-10. . . .

Navy and Marine Corps Aircraft Procurement

To continue the modernization of the forces and provide for combat attrition in Vietnam, we now propose to increase the FY 1966 procurement program to a total of 1,129 aircraft and buy another 620 aircraft in FY 1967. . . . In effect, therefore, we have already started the procurement of these additional aircraft; and the funds required to complete this financing are included in the FY 1966 supplemental request, raising the total for this year to $2,231 million. The proposed FY 1967 aircraft procurement program would cost $900 million.

In the fighter category, we have substantially increased the proposed FY 1966 procurement program for F-4's over that planned a year ago. However, as I noted last year, we encountered a number of problems in the development of the Phoenix missile and the airborne missile control system for the F-111B. These problems have not as yet been fully resolved and some delay in the F-111B program appears inevitable.

In order to provide for attrition in Vietnam and continue the modernization of the Navy and Marine Corps attack forces, we now propose to buy significantly more attack-type aircraft in FY 1966 than planned last year and another large quantity in FY 1967. Included in the FY 1966 program are additional A-4E's, financed in the supplemental. Although the last procurement of these aircraft was made in FY 1964, the TA-4E, a trainer version of the A-4E (which I will discuss later), is still in production. We also propose to increase the FY 1966 procurement quantities of the A-6A and the A-7A.

Another large quantity of the latter is included in the FY 1967 budget. Also, the first procurement of 100 OV-10's (COIN-LARA) for the Marine Corps is scheduled in FY 1967. As noted earlier, we propose to initiate the development of a new electronic countermeasure aircraft, the EA-6B, and fund the first increment in FY 1966.

I pointed out last year that we had encountered difficulties in the development of the radar for the E–2A fleet early warning aircraft. Although these problems have been overcome to some extent, we do not now plan to buy any more of these aircraft, beyond those funded in FY 1966. Sufficient aircraft will be available to provide for each of the 12 attack carrier wings. The FY 1966 procurement of S–2E carrier search aircraft will be reduced slightly, reflecting the reduction of one CVS.

The helicopter program is essentially the same as I presented last year except that we have increased the number to be procured in FY 1966–67, partly to provide for attrition in Vietnam and partly to release more helicopters to the Marine Corps Reserve aircraft wing. We now plan to buy more CH–46A's and CH–53A's than previously planned. Our request includes sufficient funds to install the new Integrated Helicopter Avionics System (IHAS) on most of the CH–46's. . . .

To provide for increased pilot training in support of the Vietnam operation and free some more A–4's for the operating forces, we are increasing our FY 1966 procurement of the TA–4E. These additional TA–4E's will be assigned to the Combat Readiness Air Wings (CRAW's) and to the Marines.

Navy A7A Corsair.

CH–46A Helicopter Lands Troops.

Other Navy Procurement.

The Navy's logistics objective for FY 1967 is essentially the same as last year, namely, to acquire sufficient stocks to support combat consumption for a sustained period, with an average of two-thirds of the force committed. More specifically, we propose to provide ship fills and combat consumption stocks for the active Fleet and the high-readiness reserve ships (Category Alpha). In addition, we propose to provide ship fills, plus combat consumption stocks for one-third of the other selected reserve (Category Bravo) ships. Anti-aircraft missile requirements are based on estimates of enemy aircraft that might have to be engaged.

With respect to attack carrier and Marine Corps aviation, comparable logistic standards have been established. However, we have increased the planned attack sortie rates for which ordnance must be procured, by about 24 percent.

To achieve these materiel objectives and provide for combat consumption in Southeast Asia through FY 1967, we are requesting about $1,832 million for Navy missiles, ordnance, ammunition and other combat consumables; $474 million in the FY 1966 supplemental, and $1,358 million in the FY 1967 budget. With this supplemental, the amount provided for FY 1966 would total $1,192 million compared with $679 million for FY 1965.

The largest increases, compared with last year, are in air-to-ground ordnance, reflecting the consumption requirements in Southeast Asia and the expanded logistics objectives. For example, more Bullpup B missiles have been added to the FY 1966 program and the total number of MK–82 bombs to be procured has been increased significantly. Included in the FY 1967 program are large quantities of MK–81 and MK–82 bombs, as well as the new Walleye television-guided glide bombs.

As I pointed out in previous years, one of our most pressing needs in the ASW area is more modern torpedoes. Last year we requested funds to buy a large quantity of the MK–46 lightweight ASW torpedo. This torpedo is much more effective against high speed, deep diving, nuclear-powered submarines than the MK–44 which it is replacing; and it can be launched by surface ships (tubes and ASROC) and by aircraft (helicopters and fixed-wing). For FY 1967, we propose to buy another large quantity of these torpedoes.

The first increment of MK–48 torpedoes for operational evaluation was funded in FY 1966. . . . We will begin procurement toward our inventory objective in FY 1967.

Funds are also included in the FY 1967 budget for Julie and Jezebel sonobuoys as well as more 3-inch and 5-inch shells and 5-inch rockets to replace consumption in Southeast Asia and to continue the buildup of our stocks of these rounds.

Marine Corps Procurement.

Our logistics objective for the Marine Corps ground forces is to provide sufficient materiel to equip five divisions and sustain a force of four divisions in combat for a sustained period with five-sixths of the force committed. For the Marine Corps aircraft wings, we are providing equipment for four wings (one reserve) and sufficient materiel to support four wings in combat for a sustained period with two-thirds of the force committed.

A total of $791 million is now estimated for Marine Corps procurement in FY 1966, of which $517 million is included in the supplemental request. For FY 1967, $228 million is requested. A large portion ($338 million) of the additional funds requested for FY 1966 is for procurement of ammunition and ordnance equipment. In FY 1967, we propose to procure about $130 million of such materiel.

For the procurement of support vehicles the FY 1966 supplemental includes about $60 million and another $41 million is included in the FY 1967 budget. A large portion of the FY 1966 supplemental amount is for the procurement of vehicles for the new Marine Division.

In the electronics category, the Marine Corps will buy, in FY 1967, a variety of radar, radio and other communications and electronic gear, at a cost of $72 million, including equipment for the Marine Tactical Data System, the Field Surveillance Radar AN/PPS–6 (a single-man pack radar which replaces a five-man pack radar), Multi-Channel Terminal Equipment which adds additional capacity to existing radios, etc. An additional $43 million has been included in the FY 1966 supplemental budget for electronic gear.

Air Force General Purpose Forces

During the past year, we have continued our program of studies to determine the proper size and composition of the tactical aircraft forces. The results of these studies, combined with the impact of the conflict in Southeast Asia, are the source of several recommendations for change in the Air Force General Purpose Forces at this time.

Tactical Fighters.

We are still programming a tactical fighter force of 24 wings essentially the same size force planned a year ago. However, there are a number of changes within the force structure and procurement programs that we now believe should be made. For the short run, we want to: (1) replace in the active forces the aircraft lost as a result of combat in Southeast Asia and the higher tempo of operations generally; (2) provide for possible future attrition which we must now, in prudence, anticipate; (3) provide for the necessary expansion of the training base; and (4) take advantage of opportunities to improve the operational effectiveness of the present force. For the longer run, we want to obtain a better balance within the overall fighter force between multi-purpose aircraft which, though capable of both air-to-air and air-to-ground operations, are necessarily expensive, and more specialized aircraft which, though designed primarily for air-to-ground operations, can be procured and operated in larger numbers for the same cost. The net result of this more efficient mix of the two classes of aircraft will be an increase in our overall tactical air capabilities.

Accordingly, we now propose to procure the A–7 as an attack aircraft for the Air Force. . . .

A year ago we proposed an FY 1966 procurement of a sizeable number of F–4 aircraft and tentatively planned on completing the program in FY 1967. Now, to replace Southeast Asia attrition, to provide for the expanded readiness training and rotation base, and to increase the size of the force, we propose to increase the FY 1966 quantity very substantially and continue F–4 procurement in FY 1967.

The F–111A procurement schedule has been changed slightly from that forecasted a year ago in order to accommodate changes in the F–111B program and the decision to procure a bomber version of the aircraft. For FY 1967, we now propose to procure a few more than planned a year ago. The number scheduled for procurement in the subsequent years has been adjusted to the new force goal (reflecting the proposed procurement of a force of 210 dual purpose FB–111A's) as well as the expanded readiness training and rotation base.

Tactical Reconnaissance Forces.

The size of the tactical reconnaissance force presently scheduled for the FY 1967–71 period is essentially the same as recommended a year ago. However, anticipated attrition in Vietnam, together with increased training requirements, is expected to reduce the number of RF–101's available for the operating forces. This shortfall will be made up, initially, by retaining more of the RB–66's and, eventually, by additional RF–4's from new production. Another increment of RF–4's have been included in the

U.S. Marine Corp A6A Jet Aircraft.

U.S. Air Force RF–4C Aircraft.

U.S. Air Force F–111A.

FY 1967 program and more are planned for the future. . . .

As a possible future replacement for the presently planned reconnaissance aircraft, we now propose to develop a reconnaissance version of the F–111. This development will be designed to minimize the number of changes in the aircraft's present configuration and is estimated to cost $50 million, of which $12.5 million is to be programmed from available funds in FY 1966 and $12.5 is requested in the FY 1967 budget. No production decision on this aircraft is required at this time.

Tactical Air Control System (TACS).

The Tactical Air Control System provides the command and control capability for the tactical air commander in field operations. . . . We now propose to procure an initial quantity of the more capable OV–10 (formerly the COIN/LARA) aircraft in FY 1966, and a large quantity in FY 1967 to replace the older O–1's.

Special Air Warfare Forces (SAWF).

During the last year we have added to the Special Air Warefare Forces a number of aircraft including U–10's and C–47's for psychological warfare missions (leaflet dropping, etc.), and AC–47 direct fire support aircraft for operations in Vietnam. We now plan to add still more aircraft to the operational forces as well as expand the combat crew training capability.

Advanced Flying Training.

As previously discussed, we are undertaking a substantial expansion of the advanced flying training base for the active forces, to be accomplished initially by using aircraft previously scheduled for transfer to the Air National Guard and, later, by increased deliveries from new procurement. The total number of aircraft assigned to this role will be raised from about 280 at end FY 1965 to about 500 in the FY 1967–71 period.

In summary, the Air Force will procure a total of 780 tactical, air control and reconnaissance aircraft for the General Purpose Forces in FY 1966, at a total cost of $2,175 million. (Of this total, 479 aircraft costing $767 million are included in the FY 1966 supplemental request.) For FY 1967, 485 aircraft costing $1,572 million are requested for these forces.

Other Air Force Procurement.

For the past several years our logistic objective for the Air Force General Purpose Forces has been to have sufficient stocks to support a sustained period of combat consumption with an optimum balance of supplies for all forces engaged.

The Air Force's aircraft non-nuclear ordnance program for FY 1966 totals $1,359 million, of which $738 million is included in the supplemental request. The proposed FY 1967 program totals $1,780 million. Except in those few cases where existing production capacity makes it impossible, this combined FY 1966–67 funding will fully meet the revised inventory objectives as well as provide for all projected combat consumption in Southeast Asia.

Among the principal items in our program for these two years are large quantities of "iron bombs" used by our forces (especially B–52's) in Southeast Asia. (In total, $824 million has been included in the FY 1966–67 budgets for these types of bombs.) Large sums are also provided for napalm bombs, 2.75-inch rockets, 20mm ammunition, Bullpup missiles for the CBU and other cannister bombs. We also propose to procure for the Air Force substantial quantities of sophisticated special purpose weapons—Walleye, Rockeye, Sadeye, and the Shrike anti-radar missile.

Theater Airbase Vulnerability.

For some time we have been concerned about the vulnerability of our overseas tactical airbases and of the aircraft on them to non-nuclear attack. During the past year, a special Air Force team has made an extensive analysis of the entire problem of airbase vulnerability — how bad it is, what can be done about it, and what the benefit of vulnerability-reducing measures would be. . . .

We have included about $26 million in the FY 1967 budget to get this program under way. While its total cost is still to be worked out, I can assure you that it will be but a fraction of the value of the aircraft alone which would be otherwise lost in an attack on our air bases. Few, if any, other areas in our tactical air program offer so great a potential return on the investment. For the past three years, the Congress has denied our budget requests for tactical aircraft shelters. In view of the seriousness of the vulnerability problem I must once again urge your favorable consideration of this program in our FY 1967 budget request.

Tactical Exercises.

In peacetime, tactical exercises help the General Purpose Forces to maintain a high state of combat readiness, provide opportunities to practice close coordination among the Services and with allied forces, and furnish a realistic testing environment for new concepts and weapon systems. However, beginning in FY 1965, the pace of larger scale exercises directed and coordinated by the Joint Chiefs of Staff has slowed down with our increasing involvement in Southeast Asia. Many of the purposes of these exercises are, of course, regularly accomplished in the course of preparing, deploying and actually engaging our forces in Vietnam. For that reason, the cost of such exercises in FY 1965 totaled $42 million compared with $110 million estimated a year ago; and the current year's program is estimated at only $28 million compared with $131 million included in our original request. On the assumption that the situation in Vietnam will continue to require substantial U.S. military participation, the tentative FY 1967 program has been set at $60 million. The actual conduct of the program will be decided as events unfold.

In addition to these larger JCS directed and coordinated exercises, the Services will continue to conduct training and readiness exercises, including a number with elements of allied military establishments.

Financial Summary

The General Purpose Forces Program, which I have outlined above, will require total obligational authority of $30.0 billion in FY 1966, of which $8.8 billion is included in the supplemental request, and $25.7 billion for FY 1967. A comparison with prior years is shown below:

($ Billions Fiscal Year)

	1962 Original	1962 Final	1963 Actual	1964 Actual	1965 Actual	1966 Est.	1967 Prop'd
Total Obligational Authority	$14.5	$17.5	$17.5	$17.7	$19.0	$30.0	$25.7

Airlift and Sealift Forces

Included in this program are the Military Airlift Command transports, the Air Force's Tactical Air Command troop carrier aircraft, the transport and troop carrier aircraft in the Air Force's reserve components, and the troop ships, cargo ships, tankers and "forward mobile depot" ships operated by the Military Sea Transport Service.

I believe it is apparent from my discussion of the limited war problem and our General Purpose Force requirements that an adequate airlift/sealift capability is essential to our global strategy in the collective defense of the Free World. As I have pointed out in previous years, there are at least four ways in which a quick-reaction capability can be achieved:

- Military forces can be deployed, in advance, to potential trouble areas.
- Equipment and supplies can be prepositioned in those areas and military personnel airlifted in as required.
- Equipment and supplies can be stored aboard ships deployed near potential trouble spots, again with the men airlifted in as needed.
- Both men and equipment can be held in a central reserve in the United States and deployed by airlift and sealift as required.

Each of these methods has its own advantages and disadvantages. For example, while the prepositioning of our forces overseas probably provides the fastest response capability and reduces the need for airlift and sealift, it also introduces a greater degree of rigidity into our military posture by committing forces in advance. Moreover, this approach increases our overall requirement for men, materiel and foreign bases and involves the operational uncertainties and diplomatic difficulties which often arise from such semi-permanent overseas deployment; it also increases defense expenditures abroad.

In contrast, a central reserve of mobile General Purpose Forces in the United States, ready for immediate deployment provides considerably more operational flexibility and does not require as big an overseas military establishment as does a strategy which relies on such geographically dispersed forces. However, timely deployment from a central reserve requires very large strategic airlift and sealift forces readily available at all times.

The prepositioning of equipment and supplies overseas either in land-based or sea-based depots is something of a compromise between the two extremes. This approach to the problem of quick response, while economizing on manpower, requires larger stocks of supplies, and some manpower, since such stocks must be maintained at each overseas prepositioning site. And, of course, we must also have the airlift needed to move the men to where they can be joined with the materiel. However, our capacity to move men is far greater than our capacity to move equipment and supplies, and for this reason, prepositioning has proven very attractive in certain situations during the past few years, especially in the case of very heavy and very bulky equipment.

Prepositioning on land, although necessary in many instances, involves in addition many of the same problems encountered in deploying large forces in foreign countries. Restrictions imposed by the host country could, in some cases, affect the availability of the stocks and thereby limit our own freedom of action. Moreover, maintaining the materiel overseas in a ready-to-use condition can be quite costly, and almost always involves substantial foreign exchange outlays. Also, in places such as Southeast Asia, the costs of maintaining certain types of equipment which are especially susceptible to deterioration in hot and humid climates can be quite high.

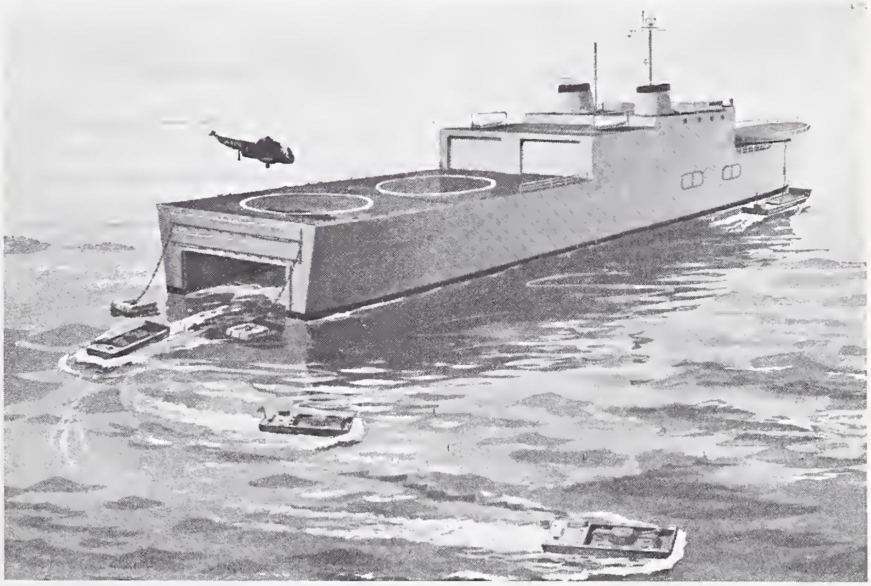
It was these factors, in particular, which led us to view with favor the so-called "floating depot" concept which we have developed and expanded over the last few years. By loading the equipment and supplies aboard ships in which the temperature and humidity can be controlled and by stationing these ships in Far East waters, we are able to move the materiel to any part of that area in a matter of just a few days. And the troops can be moved by air well within the time these ships require to get to their destinations. . . .

From that time on we have each year consistently raised our goals both with regard to the airlift and the sealift. We are now proposing an expanded airlift program which will provide by FY 1973 an equivalent 30-day lift capability from West Coast airfields to Southeast Asia more than ten times greater than that available in FY 1961, and nearly double the goal I talked about last year. This increase is to be achieved through two major changes in the program.

First, we are now proposing a large increase in the C–5A program.

Second, as I informed the Committee last August when I appeared in support of the amendment to the FY 1966 budget, we have substantially increased the planned utilization rates of airlift aircraft by raising the manning levels of selected units, both active and reserve. . . .

With respect to the intra-theater and assault airlift capability, generally, we will have by end FY 1967 30 squadrons of C–130's (472 U.E. aircraft), over half of which will be the longer range C–130E's. . . .



Fast Deployment Logistic Ship (FDL).

By end FY 1968 we will have many hundreds of C–130's and C–141's in the active forces. . . .

In addition, the Air Force will shortly begin a program to modify the C–123 aircraft, now assigned to the Special Air Warfare Forces, with jet engines and anti-skid brakes. . . .

The C–124 provides a limited but valuable tactical airlift capability. . . .

Later, as the new C–5A's are delivered to the active forces, a large number of C–130's will be transferred to the reserve forces to replace the C–124's.

Over and above these programs, we are re-examining the entire problem of "retail" airlift within the theater. It is clear that an efficient mix of tactical airlift aircraft must be available to assure that our deployed forces can be promptly committed to combat once they deploy to the theater of operations. Exactly what this mix of aircraft should be, however, is still not clear. Therefore, the Services are undertaking a comprehensive study of our tactical airlift requirements for the longer term.

With regard to sealift, we are continuing to concentrate our attention on the special purpose ships, increasing the number of Victory class forward mobile depot ships and adding more Fast Deployment Logistic (FDL) ships to the program.

The ultimate number of FDL ships to be constructed is yet to be determined. However, it is clear from our experience over the last six months that in a limited war it may be desirable to supplement the U.S. Merchant Marine with DOD special purpose shipping.

In a general war there is no question that we can commandeer for military purposes all of U.S. Flag shipping, if required. But, in a limited war the situation is never as clear cut, particularly in the kind of military operation we are now supporting in Southeast Asia. Yet this is precisely the kind of situation we are most likely to confront in the years ahead.

Even last year I pointed out to the Committee that, while we depend very heavily on the Merchant Marine for our sealift, it takes time to assemble the ships and load them. Therefore, if we want a capability to deploy large forces rapidly to distant areas, we need both additional airlift and immediately available fast sealift. Our immediate problem of sealift in support of our effort in Southeast Asia is being solved by reactivating additional National Defense Reserve Fleet ships and by using whatever other shipping is available, with first priority for U.S. Flag vessels. Already we have reactivated 58 ships from the Reserve Fleet, and more will be reactivated over the next few months. These ships, together with the MSTS nucleus fleet and other available private shipping, should be sufficient to meet all of our requirements as we see them now. If these requirements should increase, we still have a relatively large number of suitable ships in the Reserve Fleet which could be reactivated. And, of course, there are some ships in the U.S. Merchant Marine we haven't used and some 4,500 ships of other friendly nations we haven't called upon.

Airlift

. . . Funds for the procurement of the first eight C–5A aircraft are included in the FY 1967 Budget. The first large procurement will be made in FY 1968. . . .

The C–141 program which we presented here a year ago envisioned an ultimate 13 squadron force (208 U.E. aircraft), a FY 1966 procurement of 84 aircraft and a final FY 1967 buy of 31. . . .

Sealift

As previously mentioned, we plan to proceed with the construction of a fleet of Fast Deployment Logistic ships. Last year we requested funds for four of these ships and tentatively scheduled the procurement of more in subsequent years. Although Congress funded only two of these ships in the FY 1966 budget, all of our analyses during the past year confirm their value to the sealift force. Therefore, we have tentatively scheduled the construction of additional ships in the FY 1968–71 period. However, we propose to build these ships under much the same kind of "total package" contracting procedure used for the C–5A. Our schedule calls for a contract definition competition in mid-FY 1967 with contractor selection and award of the two FY 1966 ships coming in the spring of 1967. Considering the length of time necessary to make this selection and get production facilities and procedures organized, we have decided to defer further procurement of these ships until FY 1968. However, $10 million in research and development funds will be needed to initiate contract definition and these funds are included in the FY 1966 supplemental. . . .

The three Victory-class cargo ships which were converted to forward mobile depots in FY 1963 are presently deployed around Subic Bay in the Philippines. Last year we tentatively planned on converting more of these Victory ships with the entire force to be operational by end FY 1967. We now plan to increase that force by about ten percent. These ships will be phased out when the new fast deployment logistic ships become available for this role. . . .

One shallow draft tanker, especially suited for operations in Southeast Asia, has been activated this year, raising the total tanker force to 26. We propose to keep the tanker force at this level over the next few years. The program which we began in FY 1965 of rehabilitating and lengthening the MSTS tankers built during World War II will be continued. Funds for modernizing four of these ships were provided in the FY 1965–66 budget and additional funds are requested for two more in FY 1967. We are also studying the desirability of replacing some of these older tankers with new ships. . . .

Financial Summary

The Airlift and Sealift Forces I have outlined will require Total Obligational Authority of $2.2 billion in FY 1966, of which $0.5 billion is included in the supplemental request; and $2.1 billion in FY 1967. A comparison with prior years is shown below:

($ Billions, Fiscal Years)

	1962 Orig.	1962 Final	1963 Actual	1964 Actual	1965 Actual	1966 Est.	1967 Proposed
Total Obligational Authority	.9	1.2	1.3	1.2	1.5	2.2	2.1

Research and Development

Included in this major program are all the research and development efforts not directly identified with weapons or weapon systems approved for deployment.

We have made a special effort this year not only to cull out any marginal projects in the FY 1966 and 1967 research and development programs, but also to defer to future years all projects whose postponement would not have a seriously adverse effect on our future military capabilities. But even while we have eliminated, reduced and deferred projects in some areas of this program, we have had to add, increase and accelerate projects in other areas to meet newly recognized urgent requirements. . . .

Before I turn to the specifics of the FY 1967 Research and Development program, there are two general areas which might usefully be discussed as entities rather than in terms of the separate projects which they comprise. These are nuclear testing and test detection, and the space development projects.

Nuclear Testing and Test Detection

. . . The Defense Department, in cooperation with the Atomic Energy Commission (AEC), is committed to four specific safeguards with relation to the Test Ban Treaty. For the Defense Department's portion of this program, we have budgeted a total of $239 million for FY 1967, compared with $241 million in FY 1966 and about $250 million in FY 1965.

In support of the first safeguard—the underground test program—we have included $28.5 million in the FY 1967 budget, compared to $30.6 million in FY 1966. . . .

In support of the second safeguard—maintenance of modern nuclear laboratory facilities and programs in theoretical and exploratory nuclear technology—our FY 1967 budget includes $53 million. . . .

About $35 million has been included in the FY 1967 budget in support of the third safeguard—the maintenance of a stand-by atmospheric test capability. . . .

In support of the fourth safeguard—the monitoring of Sino-Soviet nuclear activities—we have included a total of $122.2 million in the FY 1967 budget, compared with $113.5 million in FY 1966 and $111.9 million in FY 1965. We conduct two principal programs to support this safeguard—the Advanced Research Projects Agency's Vela program and the Atomic Energy Detection System (AEDS).

The Vela program is directed to the development and demonstration of an advanced surveillance system for detecting, locating and identifying nuclear tests underground, underwater, in the atmosphere and at high altitudes in space. . . . Approximately $8 million has been included in the FY 1967 program for the space portion of the Vela program.

The Vela underground test detection program is also progressing very well and another $32 million has been included in the FY 1967 program for the space portion of the Vela program.

The Vela underground test detection program is also progressing very well and another $32 million has been included in the FY 1967 budget to continue this work. The construction of a Large Aperture Seismic Array (LASA) was completed last year in eastern Montana. . . . We have also included $10 million in the FY 1967 budget for preliminary work on other LASA arrays, but these funds will not be committed until the effectiveness of the Montana LASA system is fully evaluated. . . .

Space Development Projects

While the various elements of the Defense Department's space effort are spread, on a functional basis, throughout the program and budget structures, I believe this effort can be more meaningfully discussed as a separate entity.

Again, I want to remind you that the Defense space program is an integral part of the much larger National Space Program, expenditures for which now total over $7 billion a year. The Defense portion of this national program is designed (1) to explore the space environment for military purposes, (2) to complement the work of NASA and other Government agencies in those fields in which the Defense Department has already achieved a high degree of technical competence and (3) to explore the usefulness of manned space systems for military purposes. . . .

Accordingly, from the outset, I have laid down two fundamental criteria which the Defense space effort must meet. First, it must mesh with the efforts of NASA in all vital areas, i.e., the Defense and NASA programs taken together must constitute a single, integrated national program. Second, projects supported by the Defense Department must hold the distinct promise of enhancing our military power and effectiveness. . . .

In total, about $1,621 million of our FY 1967 budget request is for the space program, slightly less than in FY 1966.

Spacecraft Mission Projects.

The largest space mission project in terms of total program cost is the Manned Orbital Laboratory (MOL). Last year I described four courses of action which we planned to take preliminary to a final decision on proceeding with this program. Briefly they were as follows:

- The Air Force was to define an experimental program to meet the broadened military objectives of MOL, placing emphasis on developments which might lead to operational systems. The Air Force was also to determine the essential vehicle characteristics required to meet those objectives and, in cooperation with NASA, was to define any additional significant experiments of a general scientific and technological nature which should be carried out.
- The Air Force was to assess the proposed specifications of a MOL system, i.e., the Gemini B vehicle, the laboratory section and the Titan IIIC booster, against the needs of the experimental program. Three preliminary design studies were to be initiated with industry to provide the cost and technical information needed to select the final configuration. The Air Force was also to examine various configurations of the Apollo system that were being studied by NASA to meet its own objectives.
- To preserve the option of proceeding with MOL on an orderly basis and to make effective use of the Titan III R&D flight program, action was to be taken to qualify components of the Gemini B plus laboratory configuration aboard Titan IIIC approved development vehicles. (No men were to be carried on these flights.)
- One hundred and fifty million dollars was to be included in the FY 1966 budget for continuing design studies, narrowing the effort to two contractors for program definition and to a single contractor for subsequent full-scale development. The study contractors were to be selected on the basis of their ability to execute development, whether the approach finally selected was the Gemini B or a version of the Apollo system. No FY 1966 funds were to be obligated until we were convinced that a satisfactory approach had been found, and that the expected results of the program would be commensurate with the cost.

The actions (including the provision of $150 million in FY 1966) were carried forward during the spring and summer of last year and after a thorough discussion of the MOL project with the Space Council, the President on August 25th decided to proceed with its development at an estimated cost of about $1.5 billion.

NASA will study the MOL to determine the feasibility of using it for experiments of a general scientific and technological nature. The Air Force will attempt to accommodate these experiments wherever possible as long as they do not seriously interfere with the military objectives. As in the past, NASA and DOD will continue to work closely to ensure that the manned space flight effort of both agencies is fully coordinated and that the program is integrated with the national effort. . . .

We intend that the MOL development program should proceed on a deliberate and orderly schedule, using the $150 million provided for FY 1966 and the $159 million requested for FY 1967. Design definition, system integration, development of specifications and determination of firm cost proposals are scheduled for completion during this coming spring and summer, after which contracts will be awarded for the full-scale development of hardware.

The next item, Gemini (Manned Space Flight), represents the Defense Department's participation in the NASA-Gemini program. The $2 million provided for FY 1966 will complete the remaining military experiments planned through the end of this calendar year. . . .

A total of $62 million is requested in FY 1967 to continue work on Defense satellite communications development programs, which I described to you some detail last year. . . .

Vehicle, Engine and Component Developments.

The largest project in this category is still the Titan III development, for which about $66 million is requested in FY 1967. . . .

The current principal effort under the START (Space Technology and Advanced Re-entry Tests) program is project Prime, for which we included $16 million in the FY 1967 budget. . . .

The $2 million requested for Advanced Space Guidance is to support four major tasks: definition of guidance and control requirements for advanced manned orbiting systems and re-entry spacecraft and conceptual development of techniques and components to support these requirements; investigation of horizon sensing techniques and sensors to establish capabilities for precision space navigation; investigation of star tracking techniques and sensors to determine space capabilities and limitations; study of known and unknown landmark tracking for autonomous space navigation.

The $2 million included in the FY 1967 budget for Solid Rocket Engine Development is for the continuation of studies in large solid motors for future ballistic missile and space launch vehicles. . . .

Two years ago we initiated a new liquid rocket engine program, designed to demonstrate the feasibility of the modular approach to large rocket engine development. . . . A sum of $15 million is required for this program in FY 1967.

Other Defense Activities Supporting the Space Program.

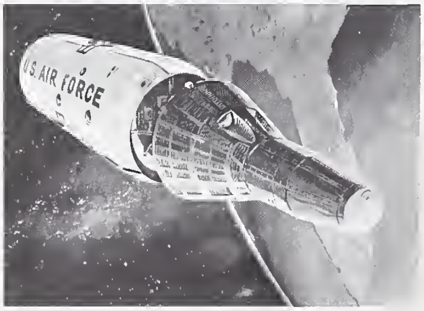
The Ground Support category includes the prorated cost of the missile ranges and test instrumentation as well as the satellite detection and tracking systems. The largest item in this category is the $134 million for the Eastern Test Range.

The next largest item is the ground based system for satellite detection, tracking and control — Spacetrack (USAF) and SPASUR (Navy). . . . The FY 1967 budget includes $33 million for Spacetrack and $6 million for SPASUR.

The $59 million requested for Satellite Control Facilities will continue the modernization and improvement of the existing network of six permanent tracking stations and one control center and provide for the construction of a new permanent tracking station on Guam to replace the temporary mobile unit now being used there. . . .

Research

. . . for FY 1967, we are asking a total of $417 million. This is about $27 million more than the $390 million available for FY 1966 with most of the increase ($18 million) devoted to the new "University Program". As I informed the Committee last year, the Executive Branch under the leadership of the President's Office of Science and Technology has undertaken a program to develop centers of technical excellence in all parts of the country, for both civilian and military purposes. The concentration of the Government's research effort in a relatively small number of the larger universities has been a matter of concern for many years. The new University Program will seek to broaden the research base by helping other institutions participate in the effort. With regard to the Defense portion of this program, we plan to take the initiative and systematically visit those universities which have not as yet had the opportunity to bid for Defense research work. In the course of these visits, we hope to help these institutions determine their capabilities and inform them on how to prepare proposals. This new effort should help broaden the research base and enable the Government to tap the full potential of the Nation's existing capabilities in this area.



USAF Manned Orbiting Laboratory.

Defense research in the Engineering Sciences, for which we are requesting a total of $119 million in FY 1967, is directed primarily toward the solution of problems anticipated in the development of hardware for future operational systems.

- Electronics research ($28 million) is concerned with the discovery of new concepts and techniques for the development of electronic devices. . . .
- Materials research ($47 million) is directed toward the development of new compounds, composite structures, plastics and alloys. . . .
- Mechanics research ($29 million) investigates the behavior of structures and machines under static and dynamic loads. . . .
- Energy conversion ($15 million) studies try to improve thermoelectric and solar energy devices. . . .

Research in the Physical Sciences, for which we are requesting $95 million for FY 1967, advances our understanding of natural phenomena. Such progress is fundamental to all other research.

- General physics ($30 million) concentrates on the classical fields of optics, thermodynamics, and statistical mechanics. . . .

Air Force Titan III–C.

- Nuclear physics ($16 million) is concerned with both nuclear structure and cosmic ray propagation. . . .

- Defense research in chemistry ($11 million) is devoted particularly to the synthesis of new compounds and materials. . . .

- Mathematics research ($38 million) develops new methods of calculating and representing natural phenomena. . . .

Environmental Sciences, for which we are requesting about $57 million, investigate the earth, air and sea around us and are increasingly important as man extends his domain into space and under the sea.

- Terrestrial sciences ($6 million) support basic research in seismology, geodesy and soil mechanics. . . .

- Atmospheric research ($21 million) investigates the air nearest the earth. . . .

- Astronomy and Astrophysics ($10 million) are concerned with natural phenomena beyond the earth's atmosphere. . . .

- Oceanography ($20 million) explores the nature of the sea and maps the ocean floor, the knowledge of which is vital to our undersea warfare effort. . . .

Research in Biological and Medical Sciences, for which we are requesting $34 million, is directed primarily toward reducing the impact of military casualties and to the provision of the best possible medical care for military personnel in the field. . . .

Behavioral and Social Sciences, for which we are requesting $13 million, concern the psychological and physical factors which influence human performance. . . .

The **Nuclear Weapons Effects Research** program is managed by the Defense Atomic Support Agency (DASA) under the general direction of the Joint Chiefs of Staff and the Office of the Secretary of Defense. The program includes applied research in the fields of air blast, nuclear and thermal radiation and biomedical, electromagnetic and other military significant effects. . . .

Special High Frequency Radio.

Exploratory Development

This is the effort directed toward the expansion of technological knowledge and the development of materials, components, devices and systems which it is hoped will have some useful application to new military weapons and equipment. Here the emphasis is on exploring the feasibility of various approaches to the solution of specific military problems, up to the point of demonstrating feasibility with a "bread board" device and prototype components and subsystems. Along with Research, Exploratory Development forms the pool of technical knowledge from which future systems will be devised and designed. . . .

We are requesting a total of $1,063 million for Exploratory Development in FY 1967, $97 million less than the amount provided in FY 1964. . . .

Army.

The Army's Exploratory Development effort is directed to devising new means to provide the front line soldier with effective close support and to protect him against all possible forms of enemy attack. A large part of the $232 million requested for FY 1967 will be devoted to techniques or equipment directly applicable to front line combat with emphasis on communications and electronics, ordnance and medicine. More specifically, this work includes: electronic counter-countermeasures; radios, antennas and survival kits specially adapted to operations in tropical jungles; light intensifiers for night vision devices; experimental radars; technology to increase the capability of combat surveillance: investigations of new concepts of boats for assault operations and for the emplacement of bridges; new vaccines, techniques to treat burns and prosthetic devices.

Somewhat less than one fifth of the Army's Exploratory Development effort is divided between aeronautics and materials. . . .

An Individual Aid and Survival Kit.

The balance of the Army's program is devoted to such projects as the development of new support and logistics techniques, automated systems for compiling maps, and improved techniques for construction on ice caps. The Army will also continue to carry out laboratory projects in nuclear effects in support of one of the safeguards to the limited Nuclear Test Ban Treaty.

Navy.

The principal Exploratory Development effort of the Navy Sea Warfare Systems is directed toward achieving better performance in naval weapons and equipment. About 40 percent of the $304 million requested for FY 1967 will be devoted to this category. Approximately $80 million of that amount is for the refinement of surveillance and navigation devices. Nearly $44 million is for the development of new design concepts for naval vessels, such as the Albacore type of submarine hull; captured air bubble ships; bow sonar domes, hydrofoil craft and new hulls to penetrate ice more easily. The remainder of the Sea Warfare Systems effort is directed toward better countermeasures and logistics. The decrease in funds allocated to this category in FY 1967 does not reflect a de-emphasis of Sea Warfare Systems but rather the maturing of some major efforts to the Advanced Development stage.

With respect to communications, electronics and ordnance, the Navy is especially interested in anti-radiation missiles which can home on enemy electronic emissions and in the development of missiles able to discriminate between enemy small craft and the background radar clutter created by waves. The Navy's work on aeronautics is concerned with the special problems of developing aircraft suitable for carrier operations. . . .

Air Force.

About half of the $316 million requested for the Air Force's Exploratory Development program in FY 1967 will be devoted to space investigations and related projects. This emphasis flows naturally from the fact that, whereas the problems of operating in the atmosphere are relatively well understood, we are, at this time, really "exploring" space. Currently, the major effort is directed toward achieving better systems for controlling missiles in flight. Particularly, we are working on inertial guidance, spaceborne computer techniques, navigation sensors, methods of identifying targets for missiles and terminal guidance. We are trying to develop means to make telemetric transmissions more secure and to improve the pumps, nozzles and combustion chambers of the rocket motors. In the area of bioastronautics, we are concerned with designing devices to sustain life in space and to counteract the lethal radiations and extremes of heat and pressure found in that environment.

About one sixth of the total Air Force's Exploratory Development program will be devoted to the improvement of surveillance techniques. Particular attention will be paid to perfecting our photographic, infrared and electronic over-the-horizon capabilities.

Finally, the Air Force will continue work on such areas as improving the arming and fuzing of conventional ordnance, better lightweight, high strength alloys, and investigating gravitational and geodetic problems.

For Air Force Exploratory Development Laboratory Support, $97 million is requested for FY 1967. . . .

Advanced Research Projects Agency (ARPA).

ARPA operates as a small research and development management team, supervising its Service-conducted programs by overall financial control and technical direction. A total of $211 million is included in the FY 1967 program for ARPA's projects in Exploratory Development, compared with $223 million in FY 1966 and $234 million in FY 1965. . . .

Advanced Development

This category includes projects which have advanced to a point where the development of experimental hardware for technical or operational testing is required prior to the determination of whether the items should be designed or engineered for eventual Service use. In contrast to engineering development where design specifications are employed, advanced development permits the use of performance specifications which provide the contractor greater latitude in meeting the requirement, thereby encouraging innovation. Both the Over-the-Horizon radar and the anti-satellite systems were developed in this category but turned out to be easily convertible to operational systems. To encourage innovation, we plan to continue the advanced development effort at a high level—about $835 million in FY 1967 compared with $830 million in FY 1966 and $588 million in FY 1965.

Army.

The first two items on the Army's list of advanced developments—Operational Evaluation V/STOL and New Surveillance Aircraft—are both part of a broader Defense Department program for the development of experimental prototype vertical, or short, take-off and landing aircraft suitable for operational testing by the three Services.

A combined total of about $380 million has been programmed by the three Military departments for this effort, from its inception through FY 1966. . . .

. . . We have included a total of about $72 million in FY 1967 for V/STOL developments compared with $69.5 million in FY 1966.

The $1 million included under Advanced Development, Army for Operation Evaluation V/STOL in FY 1967 is to cover the Army's cost of testing the XC–142A. The $3 million for New Surveillance Aircraft is for test and evaluation of the P–1127, XV–5A and OV–10A. . . .

For Aircraft Suppressive Fire Systems, $4 million is included in the FY 1967 budget. . . .

The Automatic Data Systems for the Army in the Field program is an effort to develop an integrated command and control information system for field army use by applying automatic data processing techniques to the interrelated functions of fire control, intelligence, operations, logistics and personnel. Four million dollars is requested in the FY 1967 Budget to continue work on various aspects of this effort.

The Surface-to-Air Missile Development (SAM–D), for which funds are included in the FY 1967 Budget, is the advanced missile system designed for use against sophisticated aircraft and short range ballistic missiles. . . . The FY 1967 effort is directed toward the start of Engineering Development, assuming that the current contract definition is successfully completed. In addition, investigations are under way to determine the extent to which common subsystems and components could be developed for both the SAM–D and the Navy's Advanced Surface-to-Air Missile (ASMS).

About $13 million is included in the FY 1967 budget for the Army portion of the Defense satellite communications program. . . .

The Army's Limited War Lab, formerly included in Exploratory Development, will now be carried under Advanced Development. . . . A total of $7 million is requested for the Limited War Laboratory in FY 1967.

Some $11 million is included in the FY 1967 budget for accelerated anti-malarial research to counter the drug resistant malaria now being encountered by our forces in Vietnam.

Navy.

The first two items in the Navy list of advanced developments represent the Navy's participation in the Department of Defense V/STOL development program. The amount requested in the FY 1967 budget for V/STOL development is to continue work on the X–22, which is now being completely funded by the Navy. . . .

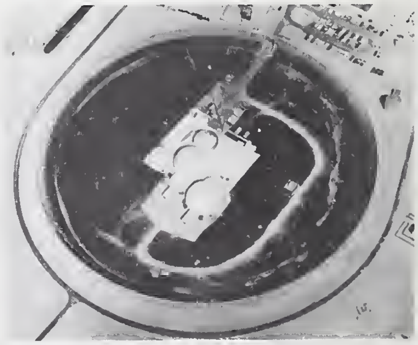
I have already touched upon the next item, the Advanced Surface-to-Air Missile System (ASMS) for which $2 million is requested in FY 1967. . . .

The $2 million requested for the Landing Force Support Weapon (LFSW) is to provide for the flight testing of the Army's Lance missile in a sea environment, i.e., launching the missile from a ship in support of landing forces.

The funds requested for ARM I are to carry forward the development of a new anti-radiation missile system as a follow-on for the Shrike missile. . . . .

Advanced ARM technology is a new effort to be initiated in FY 1967, which looks beyond the ARM I. Four

V/STOL Aircraft XC–142A.



NIKE–X Multi-Function Array Radar.

million dollars is requested to initiate this program in FY 1967.

The $3 million included for Augmented Thrust Propulsion is to continue work on an advanced sea-based deterrent, i.e., a broad program of investigation and applied research focused on possible configurations of future sea-based strategic systems from which an advanced weapon system may eventually evolve.

The $3 million requested for Astronautics in FY 1967 is for the Navy's portion of the Defense satellite communications program, more specifically, for the development of new ship-based terminals. No additional funds are required for the geophysical satellite (Project ANNA).

The remaining items on the Navy's Advanced Development list are all related to anti-submarine warfare. We have included in the FY 1967 budget a total of $355.4 million for ASW RDT&E, $98.5 million of which is for Advanced Development.

The first item in this group, Advanced Undersea Surveillance, includes two projects for which a total of $6 million is requested in FY 1967. The first of these, ASW Surveillance, for which $4 million is requested, is the combination of the Artemis and Trident efforts. . . . The remaining $2 million is required for a new project, Inshore Undersea Warfare, which is designed to explore detection techniques to counter very small underwater craft and frogmen attacking ships, harbor installations and amphibious assault areas.

The next item, Airborne ASW Detection Systems, for which $23 million is requested in FY 1967, includes a number of related projects. . . .

Funds are included in the FY 1967 budget for the development of a number of new sonars for submarines and surface ships, including passive and active sonars with significantly increased performance, reliability and maintainability. Funds are also included for advanced development work to improve the combat effectiveness of current and new torpedoes.

The $4 million requested for Advanced Surface Craft in FY 1967 is for the evaluation of the 110-ton, 45-knot hydrofoil patrol craft (PCH) already completed and the 320-ton, 50-knot hydrofoil auxiliary ship (AG-EH) to be completed this spring. . . .

One of the important efforts being pursued in FY 1967 is the Deep Submergence program for which $22 million is requested. . . .

The program Reactor Propulsion Plants, for which $13 million is requested in FY 1967, covers two major projects. One of these is directed to the development of a "natural circulation" nuclear power plant which would provide a quieter, safer, more reliable propulsion plant for submarines. The second project is directed to the development of a high shaft horsepower nuclear propulsion plant suitable for use on attack carriers. . . .

. . . The Sea Hawk/ASW Escort project is being reduced from a full systems development to work on the principal components. The first of these projects, Combined Gas Turbine Propulsion, is concerned with the overall performance and potentials of ship-based gas turbine machinery. The second is the Active Planar Array Sonar, a sonar which would be built into the hull of the ship, thus providing a much larger radiating and receiving aperture. . . .

. . . The other two elements of this effort are the ASW Ship Command and Control and the ASW Ship Integrated Combat System. . . .

Air Force.

The first five items on the Air Force list of advanced developments are all part of the V/STOL aircraft technology program discussed earlier.

The V/STOL Assault Transport (CX-6) project involves preliminary studies for the development of a full-scale prototype aircraft capable of carrying large payloads over relatively long distances.

The Tri-Service V/STOL development is concerned with the continued operational evaluation of the XC-142A.

The V/STOL Aircraft Technology program for which $3 million is requested in FY 1967, will provide for evaluation of various domestic and foreign V/STOL concepts, designs and equipment with a view towards the eventual design of a common operational V/STOL fighter aircraft. . . .

The V/STOL Engine Development project provides for the development of two different types of engines—the first, a pure lift engine and the second, a lift cruise engine which can deflect its thrust to produce lift during takeoff and landing and also be used for forward propulsion. . . .

The fifth project is the Lightweight Turbojet and is intended essentially to demonstrate the technology for lightweight turbojet engines for various purposes including V/STOL. . . .

The next two projects which were discussed briefly in connection with our future manned bomber defense program—Overland Radar and AWACS—are closely related. The first is concerned with the development of the radar technology which would be needed in airborne warning and control systems such as the Air Force's Airborne Warning and Control System (AWACS) and the Navy's Advanced Airborne Early Warning Aircraft. . . .

The next item is Advanced Filament Composites for which $10 million is requested to provide for the fabrication of test quantities of high strength, lightweight components made of glass fibers. . . . .

The $6 million requested for Reconnaissance Strike Capability is to develop and demonstrate a capability with multiple high-resolution sensors such as side looking radars for both Strategic and General Purpose Forces. . . .

The FY 1967 budget includes $6 million to continue the X-15 project. . . .

The $8 million requested for Advanced ASM Technology, formerly known as Tactical Missile Guidance Development, would provide for the development of both all-weather and fair-weather command and automatic guidance techniques for missiles employed against ground targets. . . .

Ten million dollars is requested in FY 1967 for continued study of the various technological and operational concepts for an Advanced ICBM. . . .

The AMSA program, for which $11 million is requested in FY 1967, was discussed in connection with the strategic bomber forces. . . .

The remaining major items on the Air Force list of advanced developments are all space projects which I discussed earlier.

Engineering Development

This category includes those projects being engineered for Service use, but which have not as yet been approved for production and deployment.

Army.

. . . The $447 million requested for Nike X will continue, on an urgent basis, a reoriented ABM effort emphasizing the development of an austere version of the multi-function phase array radar (TACMAR), the missile site radar (MSR), high speed data processing equipment, the high acceleration Sprint missile and the new exoatmospheric (DM15X2) missile. . . .

The principle element of the next item, Forward Area Air Defense, was the Mauler program which has now been terminated. . . .

Forty-six million dollars is requested in the FY 1967 budget to continue engineering development of a variety of weapons other than missiles. Included in this category is the Special Purpose Individual Weapon (SPIW) which may be considered as a possible replacement for the M–14 rifle and M–79 grenade launcher. Competitive models are under development and the better of the two will be selected in FY 1967. In a related effort, an evaluation of all competing small arms weapons, including SPIW, is being conducted to determine the best successor to the present small arms family. Recommendations from this evaluation, expected in July 1966, may affect the decision to complete the SPIW project. Development of the 107mm Heavy Mortar as a replacement for the current 4.2-inch mortar is continuing. . . .

Another major effort is the Medium Anti-tank Weapon (MAW) system. Two competitive systems have been considered and a final selection has been made. Active development will commence this year.

A new major development in artillery weapons is the 155mm lightweight Close Support Weapons System. . . .

The next two items, Aircraft Suppressive Fire System and Advanced Aerial Fire Support System, are closely related. The former, for which $16 million is requested, is concerned with the development and adaptation of weapon sub-systems for Army aircraft; and it was under this program that the presently operational helicopter armament systems were developed. During FY 1966 we initiated development of a second generation hard point target weapon system, TOW, to replace the French developed and produced SS–11 anti-tank missile which had been adapted to helicopter use. Preliminary design release and the delivery of two TOW systems, adapted to a helicopter, are expected during the latter part of FY 1967 and will undergo development tests. The Advanced Aerial Fire Support System project involves engineering development of a completely integrated armed "helicopter-like" system as a replacement for the present improvised armed UH–1B system. . . .

The $2 million provided in FY 1966 for Tactical Transport Aircraft will complete the development and evaluation of the CV–7 (Buffalo). . . . We have decided not to produce and deploy this aircraft since other aircraft are available to meet Army needs.

The $14 million requested for Combat Surveillance and Target Acquisition includes a number of different projects. Development is proceeding with a hand-held radar for the detection of moving vehicles and personnel in forward combat areas, and a standardized tactical image processing and interpretation system. A contract for test models of a new type of sound ranging equipment to help locate hostile weapons will be awarded in FY 1967. Tests of a new unmanned aerial surveillance system, designed to provide target coverage when the weather or enemy action restricts manned aircraft flights, were conducted last year and we will now begin studies of more advanced concepts in this area.

Thirty million dollars is requested for Communications and Electronics. Included in this element is the development of strategic and tactical communications equipment to provide an integrated theater army communications network interconnecting with the world-wide Defense Communication System. Funds are included for the night vision effort which offers, in addition to an early increase in operational capability, a definite possibility of a second generation of such equipment. Provision is also made for the support of an interim air traffic control system, the development of automatic data processing equipment, etc.

The funds included in the FY 1967 Budget for the Heavy Anti-Tank Assault Weapon (TOW) will provide for an expanded test program needed to ensure a high level of reliability for this front line weapon system.

Navy.

The first item on the Navy's list, Poseidon, was previously discussed in connection with the Strategic Offensive and Defensive Forces. The approximately $300 million requested in the FY 1967 budget will provide for the accelerated program designed to meet the planned operational availability date. Total development cost is estimated at $1.2 billion.

The funds requested for Point Defense Surface Missile System (PDSMS) will support a two-pronged effort—a near term, flexible air defense system for the many smaller ships which presently have no onboard capability of their own, and a follow-on effort to provide a significantly better system for the future. . . .

Anti-Tank Assault Weapon TOW.

The next four items on the Navy's list of engineering developments are all associated with undersea warfare and, in total, amount to $70 million in FY 1967. The largest single effort in this category is the development of the MK–48 torpedo. . . .

The next item provides for the development of a sonobuoy capable of giving the bearing of a target directly to the attacking aircraft. . . . The funds requested for FY 1967 will essentially complete this effort which was begun last June with $2 million of FY 1965 emergency funds.

The funds included in the FY 1967 request for ASW Rockets are for the development of a rocket boosted ballistic flight missile which will be compatible with the ASROC launcher and fire control system and will have an increased effective range. Contract definition and the start of engineering development are planned for FY 1967.

Other ASW engineering developments include a passive sonor system for submarines which will improve reception of acoustic signals and detection and classification of emitting objects. Also included in this category are a number of mine warfare developments, including new mine firing devices, mine hunting sonars and the use of helicopters to sweep sea mines.

The $8 million requested for Unguided/Conventional Air Launched Weapons will support such ordnance development efforts as Fireye, an improved fire bomb and Snakeye II, a second generation retarded bomb.

The $12 million requested in FY 1967 for Marine Corps Developments includes: an amphibious assault personnel carrier capable of transporting infantry weapons and supplies through very rough surf; a landing force amphibious support vehicle for rapid movement of supplies and equipment from ship to shore and over land; a light-weight helicopter-transportable, high performance ground radar; an automated system for integrating air support activities into the Marine Corps tactical data system; and a new data transmission

USAF SR–71 Aircraft.

system for use with standard communications equipment.

The COIN/LARA (OV–10) aircraft, discussed in this section last year under the heading Special Warfare Navy Aircraft, is now an operational systems development and will be placed in production. We are presently studying the possibility of a larger transport version of this aircraft.

Air Force.

I have already discussed most of the Air Force engineering developments in connection with other programs.

The funds requested for the J–58 engine will continue the development of this advanced power plant used in the SR–71 and the YF–12. . . .

. . . The $18 million for the XB–70 in FY 1967 is for the Defense Department's share of a follow-on test program to be pointly funded with NASA. This program, which would extend through FY 1968 at a total cost of about $54 million, would provide experimental data on structures, engines, aero/thermodynamics, etc., for large aircraft in supersonic flight.

The $4 million requested for Close Support Fighter will carry forward preliminary studies of an advanced fighter attack aircraft for both the Navy and the Air Force.

Funds are also included in the FY 1967 budget for the continued development of the YF–12A and the ASG–18/AIM–47A fire control and air-to-air missile systems already installed in that aircraft and for the adaptation of these systems to the F–12 airframe.

The FY 1967 budget provides for a wide variety of techniques designed to improve the capabilities of our strategic missiles to penetrate anti-missile defenses as well as to improve their accuracy and overall weapon system effectiveness. . . .

As previously mentioned, the Mark II Avionics project has been moved this year from Advanced to Engineering development. . . .

. . . Now undergoing contract definition, we expect to select a development contractor this year. The Mark II will have many of the same components of the Navy's Integrated Light Attack Avionics System (ILAAS).

For Nike-Zeus Targets to support the Nike X development program, $8 million is requested for FY 1967. . . .

The $11 million requested for the Joint Advanced Tactical Command and Air Control System will provide for a new program to develop a family of standard equipment such as displays, computers and communications items for use in the tactical command and control systems of all the Services. . . . The funds requested will initiate the development phase and permit the determination of the joint funding program for future years.

Management and Support

Army.

About $90 million is requested for the support of the White Sands Missile Range. . . . A major effort at this facility is the range instrumentation improvement program, now in its second year, which will refine the data collection capability and augment the range communication system.

We are also requesting $33 million for the Kwajalein Test Site, now operated by the Army. We are now developing a capability at this site to recover re-entry vehicles that impact in the lagoon.

The $195 million requested for General Support covers the costs of all Army R&D installations and activities other than White Sands and Kwajalein. . . .

Navy.

The Pacific Missile Range with headquarters at Point Mugu, California, is responsible for range scheduling, communications, weather and meteorological services and data reduction in support of assigned missile and space launch operations in the Pacific. . . . The FY 1967 request of $72.7 million is $1.4 million more than currently programmed for FY 1966. . . .

The Atlantic Undersea Test Evaluation Center (AUTEC) will have three underwater test ranges sited in a deep sea canyon off the Bahamas, designed to test weapons, sonars and acoustics systems. The $12 million request for FY 1967 is $4 million more than the current FY 1966 program, primarily because of higher construction requirements next year. . . .

Air Force.

For the Eastern Test Range, $205 million is requested in FY 1967, somewhat lower than for the current fiscal year. . . .

. . . About $70 million is requested for FY 1967 to support the Air Force Western Test Range (AFWTR) which consists of a complex of instrumentation networks supporting Air Force, Navy and NASA launches from Vandenberg Air Force, Base, Point Arguello and Point Mugu.

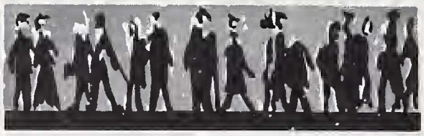
General Support, including Development Support, will require $612 million in FY 1967. . . .

Financial Summary

The Research and Development Program, including the development of systems approved for deployment, will require $6.9 billion in New Obligational Authority for FY 1967. A comparison with prior years is shown below.

($ Billions, Fiscal Years)

	1962 Actual	1963 Actual	1964 Actual	1965 Actual	1966 Est.	1967 Proposed
R&D—except systems approved for deployment	4.2	5.1	5.4	4.9	5.3	5.5
R&D—systems approved for deployment	2.6	2.5	2.2	2.0	2.1	1.9
Total R&D	6.8	7.6	7.6	6.9	7.4	7.4
Less: Support from other appropriations	−0.5	−0.5	−0.5	−0.4	−0.5	−0.5
Total RDT&E (TOA)	6.3	7.1	7.1	6.5	6.9	6.9
Less: Financing Adjustments	−0.9	−0.1	−0.1	—	−0.1	—
Total RDT&E (NOA)	5.4	7.0	7.0	6.5	6.8	6.9



ABOUT PEOPLE

DEPARTMENT OF DEFENSE

Brig. Gen. Woodrow W. Vaughan, USA, will become Asst. Dir. for Plans, Programs and Systems, Defense Supply Agency, early in April. He will replace **Maj. Gen. Victor J. MacLaughlin,** USA, who is to be Commanding General, Fort Lee, Va.

Capt. J. C. Hetler, SC, USN, has assumed duty as Dep. Asst. Dir, for Plans, Programs and Systems, Defense Supply Agency. He replaced **Brig. Gen. Joseph S. Reynaud,** USMC, who has retired.

Maj. Gen. John C. Meyer, USAF, formerly Commander, 12th Air Force, has been assigned as Dep. Dir., The Joint Staff, Office of the Joint Chiefs of Staff.

DEPARTMENT OF THE ARMY

Lt. General William W. Dick, Jr., Chief of Research and Development, will become Commanding General, Allied Land Forces, Southeastern Europe, on April 1. He will succeed **Gen. John H. Michaelis.** Gen. Michaelis has been named Commanding General, Fifth U.S. Army, succeeding **Lt. Gen. Charles G. Dodge,** who is retiring.

Maj. Gen. Austin W. Betts, who has been Dep. Chief of Research and Development, has been nominated for promotion to lieutenant general and assigned as Chief of Research and Development replacing Gen. Dick.

Lt. Gen. Theodore J. Conway, who has been Asst. Chief of Staff for Force Development, has succeeded **Lt. Gen. William W. Quinn** as Commanding General, U.S. Seventh Army. General Quinn has retired.

Lt. Gen. James H. Polk, Commanding General of the V Corps, Europe, has been designated Asst. Chief of Staff for Force Development. His successor as Commanding General, V Corps, Europe, is **Lt. Gen. George R. Mather,** who has been U.S. Representative to the Permanent Military Deputies Group of the Central Treaty Organization.

Dr. Lawrence W. Wallace, Special Asst. for the Top Management Seminar at the Army Management Engineering Training Agency (AMETA), Rock Island Arsenal, has retired. Dr. Wallace, who retired with 15 years of Federal service at the age of 85, will continue as a consultant and adviser to AMETA.

Col. Vern E. Johnson, former Chief of the Security and Investigation Div., Office of the Provost Marshal General, has assumed new duties as the Provost Marshal and Security Officer of the U.S. Army Strategic Communications Command.

Col. Edwin I. Donley has been nominated for promotion to the rank of brigadier general and assigned as Dep. Commander for Land Combat Systems of the Army Missile Command, Redstone Arsenal, Ala. He replaces **Brig. Gen. Charles W. Eifler,** now serving in Vietnam.

Col. Bernard R. Luczak, former Project Manager of the SAM-D Air Defense System, has been nominated for promotion to the rank of brigadier general and assigned to the Army Ammunition Procurement and Supply Agency, Joliet, Ill. His replacement as SAM-D Project Manager is **Col. Edward M. Dooley.**

Brig. Gen. Carroll H. Dunn, who was selected for promotion to major general last fall, has been designated Dir. of Construction, Military Assistance Command Vietnam.

Col. N. A. Lord will become the Canaveral District Engineer, Merritt Island, Fla., effective in early May.

Lt. Col. James A. Hill, former Dep. Commander of Rock Island Arsenal, has been appointed Dir. of Research and Development, U.S. Army Weapons Command. He succeeds **Col. George D. Carnahan,** who has retired.

DEPARTMENT OF THE NAVY

Dr. Gerald W. Johnson has been appointed Dir. of Naval Laboratories, a newly created post. Dr. Johnson was formerly associated with the Lawrence Radiation Laboratory, Livermore, Calif., where he was Associate Dir. for peaceful application of nuclear power. In his new position Dr. Johnson will be the principal advisor to the Asst. Secretary of the Navy (Research and Development) and have managerial responsibilities for Navy research and development laboratories.

RAdm. William P. Mack, Chief of Information, has been reassigned as Commander, Amphibious Group Two. His successor as Chief of Information will be **RAdm. Henry L. Miller,** Commander, Carrier Div. Three.

Brig. Gen. Earl E. Anderson, USMC, has been assigned as Dep. Chief of Staff (Research, Development and Studies), Hq., U.S. Marine Corps. He replaced **Brig. Gen. Wood B. Kyle, USMC.**

Veteran naval aviator **RAdm. Henry L. Miller,** 53 will become the Navy's Chief of Information on April 12.

Adm. Miller comes to Washington after serving 18 months as Commander Carrier Division 3, the Seventh Fleet's task group operating off the coast of Vietnam.

Led by the world's largest aircraft carrier, atomic powered USS Enterprise (CVAN–65), Carrier Division 3, also called Task Group 77.7, is the Navy's main striking force supporting operations in Vietnam.

The new Chief of Information is a native of Fairbanks, Alaska. During World War II he served as a naval flyer in the Pacific. He has been awarded the Legion of Merit twice and the Distinguished Flying Cross five times.

DEPARTMENT OF THE AIR FORCE

Maj. Gen. Frederick R. Terrell, Commander, 30th NORAD Region and 30th Air Div. (SAGE), Truax AFB, Wis., will become Dep. Chief of Staff, Plans and Policy for North American Air Defense Command and Continental Air Defense Command effective April 1.

Brig. Gen. Ralph C. Rockwood, Commander, San Bernardino Air Materiel Area, Norton AFB, Calif., has retired.

Nurses Sought for Military

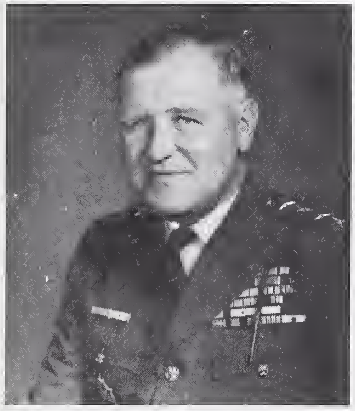
The Department of Defense has authorized the Military Departments to increase their recruiting efforts for both male and female nurses because of current strength buildup and the need for increased medical services in Southeast Asia.

Warrant officer appointments are available to qualified civilian nurses, male or female, having two years of training and E-5 or sergeant grade appointments to qualified civilian licensed practical nurses with one year of training.

Interested nurses may contact the nearest Armed Forces Recruiting Office or write to the Surgeon General of the Army, Navy or Air Force.

FROM THE SPEAKERS ROSTRUM

Address by General Creighton W. Abrams, Jr., USA, Vice Chief of Staff, U. S. Army, at the West Point Society Luncheon, New York, N. Y., Jan. 25, 1966.



Gen. Creighton W. Abrams, Jr., USA.

The Strategy of Communist China

The most recent pronouncements from Peking recall to mind the fact that many people did not appreciate the true nature of the Japanese threat in the 1920's and 1930's or the significance of Hitler's pronouncements in the 1930's and especially his grand design as outlined in Mein Kampf. I believe and hope we have learned that particular history lesson, but there is still some danger that the sinister, ruthless and long-term nature of the Chinese communist threat may not be appreciated.

About 167 years ago, the Philadelphia Monthly Magazine wrote about a civil war reportedly going on in China. What was written then may be true in part today. "Our knowledge of that nation is little, and that little too obscure to be trusted."

In his treatise, "On Protracted War," written in 1938, Mao Tse-tung wrote:

> "It is extremely important to keep the enemy in the dark about where and when our forces will attack. This creates a basis for misconceptions and unpreparedness on his part."

You will recall that it was in early 1961 that Mr. Khrushchev, then Premier of the USSR, held a congress in Moscow with representatives of 81 world communist parties. In a major policy statement to that congress, Mr. Khrushchev acknowledged that the Soviet communists recognized the dangers inherent in not only nuclear war, but in local wars as well. Although the Soviet leader preached caution with respect to general and local war, he strongly advocated so-called "wars of liberation" as the most effective current means to promote the communist cause.

Although this pronouncement came at a time when the Soviet and the Chinese communist leaders were growing farther and farther apart in their views on how world communism should be propagated, the idea of "wars of liberation" or "people's wars" was right down the line for the Chinese communists, because Mao Tse-tung in great part owed his political position and power as leader of Red China to the pursuit of such a route. Whereas the Russian Revolution of 1917 drew upon the urban workers and the defeated military forces of Russia for its manpower, the Chinese communists did it the other way. Admittedly, the following comparison is oversimplified, but where the Bolshevik workers' army spilled a considerable amount of revolutionary blood overcoming vast areas of Russia and its rural peasantry, the Chinese communists founded their movement in the rural population. Then they isolated, overcame and occupied the major cities of mainland China.

Whether this pattern of internal conquest was by accident or design we may never really know. But in any event, it had its effect upon the Red Chinese strategists who have adopted it as the basis for a militant and aggressive foreign policy. Through a recent article written by Marshal Lin Piao, Mao has broadcast his basic strategic doctrine to the world. I should like to quote from Marshal Lin's article.

> "Taking the entire globe, if North America and Western Europe can be called 'the cities of the world,' then Asia, Africa and Latin America constitute 'the rural areas of the world.' . . . In a sense the contemporary world revolution also presents a picture of the encirclement of 'cities' by the 'rural areas.' In the final analysis the whole cause of the world revolution hinges on the revolutionary struggle of the Asian, African and Latin American people who make the overwhelming majority of the world's population."

This goal of global conquest may seem impossible for the Red Chinese to attain, but so were the goals Hitler set out in Mein Kampf. However, if Mao and his supporters believe they can attain them—as Hitler did—then the actions Mao may take can create serious threats to world peace, as he has already done in Korea, Tibet and India.

To lend support to the fact that Mao believed Red China will eventually triumph, one needs only to recall his background. For about 22 of Mao Tse-tung's 72 years, he led long—and at times seemingly hopeless—armed struggle against superior forces. In 1927, after briefly working with the communists, Chiang Kai-shek destroyed their cadre in the major cities. Mao salvaged the pieces and from 1927 to 1933, he waged guerrilla warfare against the Nationalist Chinese from rural bases in the mountains of South China. By 1933, Chiang Kai-shek's army totaled about one million men, but Mao's army, relatively small and poorly trained, held out against five attempts by the Nationalists to encircle it. However, by 1934, Mao's position was so precarious that he left his bases in South China and began the legendary Long March to the North. From October 1934 to October 1935, Mao's army marched about 7,500 miles over rugged terrain, while also defending itself against the Nationalists.

Two years after completing the march, Mao led his army against the invading Japanese. By mobilizing the peasants and by skillfully working on nationalist sentiment, Mao used guerrilla warfare to harass the invading Japanese. Although nominally allied with Chiang Kai-shek against the Japanese, Mao continued his political struggle against the Nationalists and, in addition, fought three major military engagements against the Nationalists in 1939, 1941 and 1943.

History shows that the communists are patient and that they view their ultimate goals from the long term viewpoint. That Red China's first objective is to dominate Asia, there can be little doubt. This is supported by an item in the Congressional Record of April 29, 1954, which is purported to be a summary of a memorandum written by Mao Tse-tung and carried to Moscow by Foreign Minister Chou En-lai in March 1953.

> "It appears that time has come that we have to look upon Asia as our immediate goal. Under the present circumstances, any vigorous action in Europe such as internal revolution, effective infiltration, or intimidation into inaction or submission is now impossible. . . . In Asia, on the contrary, such tactics will yield an abundant harvest."

In light of what happened a year later, the next quote from the memorandum is most interesting.

> "The military operations in Indochina should be carried out . . . to make the war extremely unpopular among the French people and to make the French and Americans extremely hateful among the Indochinese people. The object is to force the French to back out of Indochina preferably through the face-saving means of an armistice. Once foreign intervention is out of the picture, . . . infiltration, forming united fronts with the progressive elements in and outside the reactionary regimes will accelerate the process of liberation."

The global nature of Red China's ambitions is evident today in its vocal encouragement of dissidence and civil strife, particularly in the underdeveloped world, and in its promotion of the formation of factions embracing Chinese communist revolutionary theory, or nationalist communist movements wherever possible. Some of these attempts have failed miserably; others have succeeded to the point of winning entire nationalist communist parties to Peking's viewpoint in its dispute with Moscow.

Why this effort so far from mainland China?

Marshal Lin again gives us the answer, and I quote:

> "The more successful the development of a people's war in a given region, the larger the number of U. S. . . . forces that can be pinned down and depleted there. When the United States . . . are hard pressed in one place, they have no alternative but to loosen their grip on others. . . . The peoples of Asia, Africa, Latin America and other regions can destroy it piece by piece, some striking at its head, and others at its feet. That is why the greatest fear of the United States . . . is that people's wars will be launched in different parts of the world. . . ."

General Giap of North Vietnam has said of the conflict in South Vietnam:

> "South Vietnam is the model of the national liberation movement of our time . . . If the special warfare that the U. S. imperialists are testing in South Vietnam is overcome, then it can be defeated everywhere in the world."

This then is the character of the Red Chinese threat. It is global in concept, total in its dimensions, determined, implacable and insidious in its actions.

Communist China is using Hanoi's manpower to make South Vietnam their major test case to prove that aggression by proxy cannot be stopped.

The Chinese communist support was a major factor in the Viet Minh fight against the French, so their continued support of Hanoi today is not unusual. Marshal Lin reaffirmed this support when he wrote:

> "The determination of the Chinese people to support and aid the Vietnamese people in their struggle against the United States . . . is unshakable."

After the Chinese communists had won control of the Chinese mainland in 1949, they began giving substantial assistance to the Viet Minh. They established training centers in southern China where Viet Minh guerrilla forces were organized, trained and amply supplied with weapons, including machine guns, mortars and pack howitzers. By August of 1950, the Chinese had equipped and trained three regular Viet Minh divisions, which by the end of the year had attacked and destroyed the chain of French posts guarding the north Indo-China border.

The Viet Minh cause was indirectly aided by the entrance of Communist China into the Korean War, because Chinese war industries were expanded, and the construction of roads and railroads was speeded up. Although the bulk of the new military supplies went to aid the Chinese armies in Korea, more supplies were also made available to the Viet Minh guerrillas.

Following Dien Bien Phu and the Geneva Accords in 1954, the communists consolidated their gains in North Vietnam, developed forward storage depots, staging areas, and constructed roads and bridges to improve their lines of communication. The successful Viet Minh offensives, in eastern Laos in 1953 and 1954, resulted in the northern third of South Vietnam being strategically outflanked, since it gave the communists access to what we now call the Ho Chi Minh trail. The Geneva Accords also provided a convenient tactical pause to enable the Viet Minh to organize the Viet Cong insurgency.

In assessing the operations in Vietnam today, it is important to remember that from 1950 to 1954, Viet Minh combat operations were conducted against the French and Vietnamese in South Vietnam, in many of the same areas where there has been heavy fighting recently. After the Geneva Accords in 1954, many of the Viet Minh stayed in South Vietnam to infiltrate the governmental structure at all levels, and to prepare the way for an eventual communist take-over. The continued discovery of extensive tunnels, arms factories, field hospitals, arms and food caches is evidence of the extent to which the communists have developed operational bases inside South Vietnam. The most recent discovery was the large, division-size tunnel complex found by the 1st Infantry Division, only 25 miles north of Saigon.

The pattern of enemy combat operations shows that the number and intensity of battalion and larger-size unit attacks have increased every year since 1962, while the company and smaller-size attacks have decreased. Terror and sabotage attacks also have increased steadily since 1962. The terrorist attacks, which concentrate on local officials, administrators, school teachers, health workers and police are aimed at the very foundation of the nation-building process. For example, in 1965, there were over 20,000 known Viet Cong incidents of terror and over 4,000 incidents of sabotage.

Hanoi is sending more men south, because this is the best way they have to offset partially the mobility and firepower advantage that our use of helicopters, artillery and airpower gives us. This enemy strategy would be dependent on both the supplies they have stocked in South Vietnam, and on substantial infiltration of such items as weapons and ammunition. It could be a stop-and-go affair over a long period of time, by alternating their attacks with pauses to rebuild their strength.

Against the background which I have outlined, I would like to discuss what is being done from the military, social, political and economic viewpoints to combat communist aggression in South Vietnam. The military operations appear to dominate the scene at the present time, but the other programs are going on concurrently. In his report following his recent trip through Asia, Senator Mansfield said:

> "General Nguyen Cao Ky, the Prime Minister, recognizes that a purely military solution to the problems of Vietnam is not possible. Security and social and economic reform, in his view, must proceed hand in hand in order to gain the support of the people."

However, it is also recognized that with the escalation of Hanoi's military commitment, South Vietnam's success in gaining and maintaining control of the some 9,000 to 10,000 villages in the countryside is dependent in great part upon the success of military operations. Conversely, the social, economic and political programs, which the military operations are supporting, also contribute to the success of military operations. Security must be provided in the countryside if the nation-building processes are to move forward.

From our bases along the east coast, such as Da Nang and Cam Ranh Bay, and from our inland bases at Saigon, Pleiku and An Khe, the allies are extending their control over the surrounding areas to provide a more secure environment in which Vietnamese nation-building can take place. It is often difficult to be sure where the loyalties of a village lie, or to determine if the Viet Cong local subversive organization has been destroyed.

One result of our buildup in support of the Vietnamese effort has been the United States-government of Vietnam capability to increase the number and scope of search and destroy operations. The Viet Cong are being hunted down in areas where they had previously been safe from attack. The recent joint American-Australian operations, in the Iron Triangle area north of Saigon, is a good example of this, as was the 1st Cavalry Division's fight near Chu Pong mountain.

Next I will point out some things being done in the social, political and economic areas, but as with the military operations, the exact progress being made is not always easy to evaluate. Psychologically, the arrival of large numbers of American combat troops has had a positive effect on government-held areas. This is seen in the improvement of morale in the government, in the armed forces and in the return of confidence among many Vietnamese civilians. At the same time we are being very careful that our actions embellish rather than detract from the basic premise that ultimately victory will depend on government of Vietnam efforts, civil as well as military.

Concurrently, there has been a period of government stability which is essential if public confidence and support are to be maintained. This increased stability not only contributes to the effective prosecution of the war, but also makes it easier to carry out the necessary economic, social and political reform programs. After the fall of the Deim government, the pacification program to bring political, economic and social organization into the hamlets lapsed for awhile. Besides the renewed rural reconstruction program, which is regarded as a more thorough and realistic effort than before, other programs to improve the welfare of the people are under way. For example, a program to redistribute 700,000 acres of land to 180,000 farmers is under way. It is generally recognized that it will take time to make any substantial political gains among the uncommitted part of the population with these programs, but we have to be patient also and, as Captain Spruill wrote home before he was killed: "For us to despair would be a great victory for the enemy."

The Vietnamese government has also instituted a resources control program, to restrict the flow of supplies to the Viet Cong, but in many parts of Vietnam, particularly in the fertile and densely populated Delta, there is plenty of food for everyone.

Senator Mansfield, in his report on January 9, summarized the basic problem that has accompanied the increase in military operations by both sides:

> "The ravages of war and terrorism, however, are taking a toll of the country's productive capacity. Rice fields and rubber plantations in areas that are being bombed and fought over no longer produce their contribution to feed the people and to nourish the economy. Fledgling enterprises in outlying areas, cut off from supplies and from markets by interrupted communications, wither and fail."

Note that the social, political and economic programs which I have mentioned are being planned and carried out by the Vietnamese government, though we are giving all the advice and assistance we can. But in the long run, the Vietnamese are the ones who must make these programs work and it is the Vietnamese government which must eventually win the loyalty of the people, regardless of the amount of assistance we and other nations provide. To this end, American assistance to the people is channeled through the Vietnamese government.

Though our military forces have conducted many recent military operations, they are also contributing to the effort to win the loyalty of the people. For example, military medics treat thousands of villagers, besides teaching them basic first aid and hygiene. Soldiers in many units have contributed funds to support orphans, to help refugees and to help villages adjacent to their areas. Our helicopters have flown countless missions of mercy to evacuate refugees, to carry food to isolated areas and to evacuate wounded civilians. These are only a few of the many contributions, which when added together, are bound to have a beneficial effect on winning the people's loyalty. The language barrier is a hindrance at times, but acts of decency and human kindness speak for themselves and people are pretty much the same the world over in their response.

I do not have any doubt but that our nation has the means to support our commitment in Vietnam, both in terms of manpower, money and perseverance. Our nation and many of our allies are all too familiar with what the preservation of our freedom and our way of life have cost in the past. No one can place a price tag or a ceiling on the cost of freedom—and I believe the eventual freedom of a large part of the Free World is now being decided in Vietnam.

We must all realize that the Chinese communists' challenge to the Free World in South Vietnam today is another example of their insatiable greed for power and world conquest. What is our answer to Mao Tse-tung's announced strategy of eventual world conquest? The Honorable Cyrus Vance, our Deputy Secretary of Defense, provided a straightforward answer in a speech last October when he said:

> ". . . we agree that Mao's clear intent is that his brand of communism should eventually surround, encircle, and finally cut off and defeat western Europe and the United States.
>
> "But we disagree that that is going to happen. Our defenses are strong, and we remain alert and ready for whatever the future may bring. But more important is the fact that the free nations of the world offer a better future for the individual, and a peaceful path to that future."

We need a thoughtful appreciation of the real nature of the Chinese communist menace—an understanding of their objectives and their philosophy; but equally important, as we have throughout our history from Lexington and Concord, Bunker Hill, Chateau-Thierry, Guadalcanal, Normandy and the Pusan perimeter, we must maintain the will to preserve our own ideals and beliefs, because as The Reverend Dean Sayre said of the current conflict in Vietnam:

> ". . . It is . . . the momentary focal point of a titanic struggle to determine in every valley of earth whether man can fulfill the image that God has imprinted on his brow, or whether he must ever remain under the bondage of blindness and human chicanery."

U.S.-U.K. Reach Agreement on R&D of Communications Satellite Project

The United States and the United Kingdom have signed a Memorandum of Understanding which provides for participation by the British in research and development associated the U.S. Initial Defense Communications Satellite Project.

U.S. Secretary of Defense Robert S. McNamara and U.K. Minister of Defence Denis Healey signed the memorandum as part of a continuing program of joint cooperation on mutual defense and space research.

Under the terms of the memorandum Great Britain will provide several ground terminals for communications tests and experiments using the U.S. Defense Department communications satellites. Costs of providing and operating these terminals will be borne by the United Kingdom. No charge will be made for their use of the communications satellites for these tests. The memorandum also provides for a mutual exchange of data resulting from this cooperative program.

The U.S. Initial Defense Communications Satellite Project provides for establishment of a space system of up to 22 communications satellites in near-synchronous, equatorial orbits. Satellite launches are planned for this year.

The U.S. Defense Communications Agency and the U.K. Office of the Assistant Chief of Defense Staff (Signals) have been designated as the project offices to handle program details and coordination for their respective governments.

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MAY 1966

SPEAKERS CALENDAR

OFFICE OF THE SECRETARY OF DEFENSE

Dr. Chalmers W. Sherwin, Dep. Dir. (Research & Technology), Office of Dir., Defense Research & Engineering at National Science Foundation and Richardson Foundation National Research Conference, Greensboro, N. C., March 26; at Research Applications Conference of the Office of Aerospace Research, Washington, D. C., April 5.

Mr. Edward T. Cook, Dep. Dir., Defense Contract Audit Agency, at National Contract Management Assn. Symposium, Los Angeles, Calif., April 15.

Lt. Gen. William J. Ely, USA, Dep. Dir. (Administration & Management), Office of Dir., Defense Research & Engineering, at Industrial College of the Armed Forces, Washington, D. C., April 7.

Mr. William B. Petty, Dir., Defense Contract Audit Agency, at National Contract Management Symposium, Washington, D. C., April 16; at Los Angeles Chapter Meeting, California Society of Certified Public Accountants, Los Angeles, Calif., May 17.

DEPARTMENT OF THE ARMY

Maj. Gen. David P. Gibbs, Chief of Communications-Electronics, at Armed Forces Communications Electronics Assn. Meeting, Fort Monmouth, N. J., April 4–5; at Institute of Electrical and Electronics Engineers Conference, Fort Huachuca, Ariz., April 27.

Lt. Gen. L. J. Lincoln, Dep. Chief of Staff for Logistics, at Industrial College of the Armed Forces National Security Seminar, Pittsburgh, Pa., May 19–20.

DEPARTMENT OF THE NAVY

RAdm. Eugene Fluckey, Commander, Submarine Force Pacific Fleet, at Navy League Meeting, San Diego, Calif., April 11.

VAdm. C. B. Martell, Dir., Anti-Submarine Warfare Programs, Office, Chief of Naval Operations, at American Ordnance Assn. Meeting, White Sands, N. M., April 20.

DEPARTMENT OF THE AIR FORCE

Gen. B. A. Schriever, Commander, Air Force Systems Command, at American Institute of Aeronautics and Astronautics Meeting, Cocoa Beach, Fla., April 19; at American Ordnance Assn. Meeting, Washington, D. C., May 5.

Lt. Gen. L. I. Davis, Commander, National Range Div., Air Force Systems Command, at Institute of Navigation Meeting, Boston, Mass., April 21.

Lt. Gen. K. K. Compton, Dep. Chief of Staff, Plans & Operations, at American Ordnance Assn. Meeting, Washington, D. C., May 5.

Maj. Gen. C. H. Terhune, Jr., Commander, Aeronautical Systems Div., Air Force Systems Command, at American Ordnance Assn. Meeting, Washington, D. C., May 5.

Maj. Gen. B. I. Funk, Commander, Space Systems Div., Air Force Systems Command, at General Dynamics/Convair, San Diego, Calif., May 11; at Aero Club Meeting, Buffalo, N. Y., May 20.

Lt. Gen. T. P. Gerrity, Dep. Chief of Staff, Systems & Logistics, at Armed Forces Day Observance, Sacramento, Calif., May 19; at Hennessy Trophy Award, Chicago, Ill., May 22; at American Institute of Industrial Engineers Meeting, San Francisco, Calif., May 26–27.

Gen. J. P. McConnell, Chief of Staff, at Armed Forces Day Observance, New York, N. Y., May 21.

NATO Special Committee Working Group Meets in Washington

The Nuclear Planning Working Group of the NATO Special Committee of Defense Ministers met for a two-day session on Feb. 17–18 at Washington, D.C., to discuss nuclear planning for the defense of the alliance.

Ministers attending the first meeting of the working group were Kai-Uwe von Hassel, Germany; Guilio Andreotti, Italy; Ahmet Topaloglu, Turkey; Denis Healey, United Kingdom; and Robert S. McNamara, United States, chairman of the group. Manlio Brosio, NATO Secretary General and Chairman of the Special Committee, also attended.

For its initial meeting the working group concentrated its attention on questions concerning planning with regard to strategic nuclear weapons. This included an appraisal of the process by which the threat to NATO is measured; consideration of the ways in which nuclear forces are planned, procured and managed; discussion of problems and procedures in the development of plans with respect to such forces as well as the command and control arrangements which govern them.

The discussion of the strategic nuclear threat against NATO and the forces available to counter the threat included a detailed examination of targeting procedures, planning with respect to allied strategic forces and an evaluation of what the various kinds of forces could be expected to achieve under different conditions of nuclear war.

The special committee is a part of an effort to increase the participation of NATO nations in allied nuclear planning and policy. It was established by decision of the North Atlantic Council following a proposal made by Secretary McNamara to the Defense Ministers' Meeting in Paris May 31–June 1, 1965.

The first meeting of the full committee was held Nov. 27, 1965, in Paris, at which time three working groups were established. The Special Committee's Working Groups on Intelligence and Data Exchange and on Communications met in Paris Feb. 7–9. These meetings and the meeting of the Nuclear Planning Working Group just concluded are additional steps to improve and extend allied participation in planning with respect to nuclear forces, including strategic forces, and to ensure that agreed consultation concerning the decision whether to use nuclear forces can take place as expeditiously as advanced technology will permit.

The Working Group for Nuclear Planning will meet next in London at the end of April. Recommendations reached by the working group will be submitted to the North Atlantic Council through the Special Committee of Defense Ministers.

CALENDAR OF EVENTS

March 23–25: Armed Forces Management Assn. System Effectiveness Seminars, Washington, D.C.

March 24–25: American University Washington Conference on Business-Government Relations, Sheraton-Park Hotel, Washington, D.C.

April 5–6: Armed Forces Communications Electronics Assn.-U.S. Army Eelctronics Command Symposium, Fort Monmouth, N.J.

April 11–15: Institute of Environmental Sciences Meeting, San Diego, Calif.

April 12–13: DOD-National Security Industrial Assn. Advanced Planning Briefings for Industry, San Francisco, Calif.

April 18–20: 1966 Local and Short Haul Carriers National Exposition, Sheraton Park Hotel, Washington, D.C.

April 18–21: Aerospace Medical Assn. Meeting, Las Vegas, Nev.

April 27–28: DOD-National Security Industrial Assn. Advanced Planning Briefings for Industry, Washington, D. C.

April 28: Property Administration Assn. Annual Seminar, Hotel New Yorker, New York City.

May 1–4: American Institute of Chemical Engineers Meeting, Columbus, Ohio.

May 5: American Ordnance Assn. Annual Meeting, Washington-Hilton Hotel, Washington, D.C.

May 9–11: National Aerospace Electronics Conference, Dayton, Ohio.

May 10–12: National Telemetering Conference, Boston, Mass.

May 11–13: American Helicopter Society Meeting, Washington, D. C.

May 16–20: American Society of Civil Engineers Meeting, Denver, Colo.

May 17–19: National Security Industrial Assn.-Navy Anti-Submarine Warfare Innerspace Conference, Washington, D.C.

May 19–20: Southern Research Institute “Membrane Processes for Industry” Symposium, Birmingham, Ala.

May 21: Armed Forces Day.

May 31–June 2: American Society for Quality Control Meeting, New York City.

June 6–10: Society of Automotive Engineers Convention, Detroit, Mich.

June 7–9: Armed Forces Communications & Electronics Assn. Convention, Sheraton-Park Hotel, Washington, D.C.

June 12–15: American Society for Mechanical Engineers Meeting, Philadelphia, Pa.

June 19–23: Assn. of Industrial Advertisers Meeting, New York City.

MEETINGS AND SYMPOSIA

MAY

Symposium on **Electrode Processes**, May 1–6, in Cleveland, Ohio. Co-sponsors: Air Force Office of Scientific Research and the Electrochemical Society, Inc. Contact: Lt. Col. M. D. Sprinkel (SRC), Air Force Office of Scientific Research, Tempo D, 4th St. and Independence Ave., S. W., Washington, D. C. 20333, (Area Code 202) OXford 6–8706.

Bionics Symposium 1966, May 3–5, at Sheraton Hotel, Dayton, Ohio. Sponsors: Aerospace Medical Research Laboratory, Aerospace Medical Div.; and Avionics Laboratory, Air Force Research and Technology Div. Contact: Dr. H. L. Oeistreicher (MRBAM), Aerospace Medical Research Laboratory, Wright-Patterson AFB, Ohio 45433. (Area Code 513) 253–7111, ext 36108.

Fifth Army Conference on **Tropical Meteorology**, May 5–6 or May 12–13, in Miami, Fla. Sponsor, U. S. Army Electronics Command. Contact. M. J. Lowenthal (AMSEL–BL–MA), Atmospheric Sciences Laboratory, Fort Monmouth, N.J. 07703, (Area Code 201) ext 61691.

Ninth Navy **Science** Symposium, May 5–6, at Departmental Auditorium, Constitution Ave. between 12th and 14th Streets NW, Washington, D. C. Sponsor: Office of Naval Research. Contact: Robert J. Mindak, Office of Naval Research (Code 104), Washington, D. C. 20360, (Area Code 202) OXford 6–4720.

Annual Conference on **Photographic Science and Engineering**, May 9–13, at San Francisco Hilton Hotel, San Francisco, Calif. Co-sponsors: Atomic Energy Commission and Lawrence Radiation Laboratory. Contact: R. P. Michaelis, Lawrence Radiation Laboratory, Berkeley, Calif.

1966 National Aerospace Electronics (NAECON) Conference on **Changing Theme in Aeronautics and New Look in Avionics**, May 16–18, at Dayton-Sheraton Hotel, Dayton, Ohio. Sponsors: Institute of Electrical and Electronics Engineers, American Institute of Aeronautics & Astronautics and Institute of Navigation. Contact: Mrs. M. S. Roberts, NAECON, 1220 E. Third St., Dayton, Ohio.

JUNE

Electromagnetic Windows Symposium, June 1–3, at the Georgia Institute of Technology, Atlanta, Ga. Sponsor: Air Force Avionics Laboratory. Contact: R. Ireland (AVWE-3), Air Force Avionics Laboratory, Wright-Patterson AFB, Ohio 45433, (Area Code 513) 253–7111, ext. 55720.

Fifth U. S. National Congress of **Applied Mechanics**, June 14–16, at the University of Minnesota, Minneapolis, Minn. Sponsors: Air Force Office of Scientific Research, Office of Naval Research, Army Research Office, American Physical Society, American Society of Mechanical Engineers for Experimental Stress Analysis, American Society for Civil Engineers, American Institute of Aeronautics and Astronautics, American Mathematical Society, Society for Rheology and American Society for Testing and Materials. Contact: Maj. Lawrence P. Monahan, Jr., U. S. Army Research Office-Durham, Box CM, Duke Station, Durham, N. C. 27706, (Area Code 919) 286–2285.

International Conference on **Crystal Growth**, June 20–24, in Boston, Mass. Sponsor: Air Force Cambridge Research Laboratories. Contact: Charles S. Sahagian (CRWPC), Air Force Cambridge Research Laboratories, L. G. Hanscom Field, Bedford, Mass. 01731, (Area Code 617) CR 4–6100, ext. 3298.

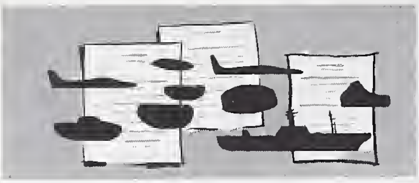
Low Speed Aerodynamic Problems Associated with Helicopters and V/STOL Aircraft, June 22–24, in Buffalo, N. Y. Co-sponsors: U. S. Army Aviation Materiel Laboratories and Cornell Aeroautical Laboratory, Inc. Contact: John E. Yeates, U. S. Army Aviation Materiel Laboratories, Fort Eustis, Va. 23604, (Area Code 703) 878–4101. (Rescheduled from March 30–April 1.)

Second Rochester Conference on **Coherence and Quantum Optics**, June 22–24, at University of Rochester, Rochester, N. Y. Co-sponsors: Air Force Office of Scientific Research and Air Force Cambridge Research Laboratories. Contact: Dr. M. C. Harrington (SRPP), Air Force Office of Scientific Research, Tempo D, 4th Street and Independence Avenue SW, Washington, D. C. 20333, (Area Code 202) OXford 6–4464.

Cold Spring Harbor Symposium on Quantitative **Biology**, dates undetermined, in Cold Spring Harbor, N. Y. Sponsors: Cold Spring Laboratory for Quantitative Biology, Air Force Office of Scientific Research, National Institutes of Health, National Science Foundation and Atomic Energy Commission. Contact: Dr. R. V. Brown (SRLA), Air Force Office of Scientific Research, Tempo D, 4th Street and Independence Avenue SW, Washington, D. C. 20333, (Area Code 202) OXford 6–4181.

JULY

Solid Propulsion Conference, week of July 18, in Washington, D. C. Co-sponsors: Interagency Chemical Rocket Propulsion Group and American Institute of Aeronautics and Astronautics. Contact: P. J. Martin, Chemical-Propulsion Information Agency, 8621 Georgia Ave., Silver Spring, Md. 20910, (Area Code 301) 589–7700, ext. 560.



DEFENSE PROCUREMENT

Contracts of $1,000,000 and over awarded during month of February 1966:

DEFENSE SUPPLY AGENCY

1—**Bristol Mfg. Corp.**, Bristol, R.I. $1,047,253. 321,490 pairs of men's high rubber overshoes. Bristol. Defense Personnel Support Center, Philadelphia.

—**J. P. Stevens, Inc.**, New York City. $2,034,000. 600,000 yards of tropical wool cloth. Rockingham, N.C. and Milledgeville, Ga. Defense Personnel Support Center, Philadelphia.

—**J. P. Stevens, Inc.**, New York City. $1,245,000. 500,000 yards of polyester wool cloth. Greer and Wallace, S.C. Defense Personnel Support Center, Philadelphia.

—**Pacific Mills Division of Burlington Industries**, Halifax, Va. $3,829,075. 1,579,000 yards of polyester wool cloth. Halifax and Clarksville, Va., and Raeford, N.C. Defense Personnel Support Center, Philadelphia.

—**J. P. Stevens, Inc.**, New York City. $2,529,000. 600,000 yards of wool serge cloth. Rockingham, N.C.; Greer, S.C.; and Milledgeville, Ga. Defense Personnel Support Center, Philadelphia.

—**Pacific Mills Division of Burlington Industries, Inc.**, Halifax, Va. $1,640,000. 400,000 yards of wool serge cloth. Raeford, N.C. and Clarksville, Va. Defense Personnel Support Center, Philadelphia.

4—**Enterprise Wire Co.**, Blue Island, Ill. $4,040,640. 368,000 coils of concertina barbed wire. Blue Island. Defense Construction Supply Center, Columbus, Ohio.

7—**Burlington Industries**, New York City. $1,422,500. 700,000 yards of tropical khaki worsted material. St. Pauls, Fayetteville and Greensboro, N.C. Defense Personnel Support Center, Philadelphia.

8—**U.S. Steel Corp.**, Cincinnati, Ohio. $1,298,446. 108,690 spools of barbed wire. Donora, Pa.; Joliet, Ill.; Duluth, Minn.; Fairfield, Ala.; and Pittsburg, Calif. Defense Construction Supply Center, Columbus, Ohio.

—**Doyle Shirt Mfg. Corp.**, New York City. $1,693,134. 611,240 men's cotton poplin shirts. Doyle, Tenn. Defense Personnel Support Center, Philadelphia.

—**Putnam Mills Corp.**, New York City. $1,087,500. 250,000 yards of herringbone twill cloth. Atlanta, Ga. Defense Personnel Support Center, Philadelphia.

9—**J. P. Stevens Co.**, New York City. $2,187,180. 522,000 yards of wool serge cloth. Rockingham, N.C.; Greer, S.C. and Milledgeville, Ga. Defense Personnel Support Center, Philadelphia.

—**Deering Milliken, Inc.**, New York City. $1,388,000. 400,000 yards of tropical wool cloth. McCormick, Johnston and Pendleton, S.C. Defense Personnel Support Center, Philadelphia.

11—**B. G. Colton Division of Raylon Fabrics**, New York City. $3,154,800. 3,300,000 yards of cloth. New York City. Defense Personnel Support Center, Philadelphia.

—**Riegel Textile Corporation of New York City.** $1,773,247. 1,900,000 yards of cloth. New York City. Defense Personnel Support Center, Philadelphia.

—**Burlington Industries, Cramerton Mills Division, New York City.** $1,868,905. 2,150,000 yards of cloth. New York City. Defense Personnel Support Center, Philadelphia.

—**J. P. Stevens, Inc.**, New York City. $1,514,787. 1,793,000 yards of cloth. New York City. Defense Personnel Support Center, Philadelphia.

—**Prestex, Inc.**, New York City. $1,943,654. 2,052,000 yards of cloth. New York City. Defense Personnel Support Center, Philadelphia.

—**Prestex, Inc.**, New York City. $1,783,465. 713,000 yards of cotton and nylon duck cloth. New York City. Defense Personnel Support Center, Philadelphia.

14—**Prestex, Inc.**, New York City. $1,216,000. 600,000 yards of cotton and nylon water repellent cloth. New York City. Defense Personnel Support Center, Philadelphia.

—**Raylon Fabrics, Inc.**, New York City. $2,484,000. 1,200,000 yards of cotton and nylon water repellent cloth. New York City. Defense Personnel Support Center, Philadelphia.

—**Putnam Mills Corp.**, New York City. $1,640,000. 800,000 yards of cotton and nylon water-repellent cloth. New York City. Defense Personnel Support Center, Philadelphia.

—**Choctaw Mfg. Co.**, Silas, Ala. $1,383,488. 647,040 pairs of men's white trousers. Silas. Defense Personnel Support Center, Philadelphia.

—**Putnam Mills Corp.**, New York City. $1,699,950. 2,475,000 yards of wind-resistant cotton poplin cloth. New York City. Defense Personnel Support Center, Philadelphia.

15—**Pembroke, Inc.**, Egg Harbor City, N.J. $1,224,000. 45,000 men's wool overcoats. Egg Harbor City. Defense Personnel Support Center, Philadelphia.

16—**General Aniline & Film Corp.**, Binghamton, N.Y. $2,740,621. 165,838 packages of radiographic film. Binghamton. Defense Personnel Support Center, Philadelphia.

21—**Pembroke, Inc.**, Egg Harbor City, N.J. $2,426,141. 89,691 men's wool jersey coats. Egg Harbor City. Defense Personnel Support Center, Philadelphia.

—**Chicopee Mfg. Co., Division of Johnson & Johnson**, New Brunswick, N.J. $1,580,150. 2,210,000 yards of non-metallic, plastic insect screening. New Brunswick. Defense Personnel Support Center, Philadelphia.

—**Rodana Research Corp.**, Bethesda, Md. $1,123,624. 1,780,704 atropine automatic injectors. Bethesda. Defense Personnel Support Center, Philadelphia.

—**Commonwealth Oil Refining Co.**, San Juan, Puerto Rico. $3,609,195. 43,500,000 gallons of JP-4 jet fuel. Defense Fuel Supply Center, Alexandria, Va.

23—**Southern Athletic Co.**, Knoxville, Tenn. $1,680,462. 266,740 pairs of men's cotton, wind resistant trousers. Knoxville. Defense Personnel Support Center, Philadelphia.

24—**Pepperell, Inc.**, New York City. $1,020,178. 1,251,349 yards of olive drab cotton duck cloth. New York City. Defense Personnel Support Center, Philadelphia.

25—**Southern Petroleum Co.**, West Memphis Ark. $1,496,994. 4,911,400 gallons of soil stabilizer. West Memphis. Defense Personnel Support Center, Philadelphia.

28—**Firestone Tire & Rubber Co.**, Akron, Ohio. $7,179,478. Nylon membrane for runway and taxiway surfacing. Akron. Defense Construction Supply Center, Columbus, Ohio.

ARMY

1—**Guy H. James Co.**, Oklahoma City, Okla. $4,632,896. Construction work on the Pine Creek Dam and Reservoir, Oklahoma Project. Engineer Dist., Tulsa, Okla.

—**Mason & Hanger, Silas Mason Co.**, New York City. $2,637,453. Detonators and 90mm cartridges. Burlington, Iowa. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**General Motors, GMC Truck & Coach Division**, Pontiac, Mich. $1,794,927. Dump trucks. Pontiac. Army Tank Automotive Center, Warren, Mich.

—**Kentucky Mfg. Co.**, Louisville, Ky. $2,540,979. 515 semi-trailers. Louisville. Army Tank Automotive Center, Warren, Mich.

—**Holston Defense Corp., Division of Eastman Kodak Co.**, Kingsport, Tenn. $13,200,582. Ordnance items. Kingsport. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Hercules Powder Co.**, Wilmington, Del. $6,693,598. Miscellaneous propellants and explosives. Raeford, Va. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Lockley Machine Co.**, New Castle, Pa. $1,430,739. Demolition kits. New Castle. Ammuntion Procurement & Supply Agency, Joliet, Ill.

—**General Motors, Allison Div.**, Indianapolis. $2,285,050. Transmissions for various vehicles. Indianapolis. Army Tank Automotive Center, Warren, Mich.

—**General Motors, Allison Div.**, Indianapolis. $6,610,330. Transmissions for various vehicles. Indianapolis. Army Tank Automotive Center, Warren, Mich.

—**Medico Industries**, Pittston, Pa. $3,480,000. Metal parts for ordnance components of the 2.75″ rocket. Pittston. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Continental Motors Corp.**, Muskegon, Mich. $1,839,963. Engine assemblies and containers for the M88 recovery vehicle. Muskegon. Army Tank Automotive Center, Warren, Mich.

—**Stewart Warner Corp.**, Lebanon, Ind. $1,541,808. 60mm projectiles. Lebanon. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Hanson Machinery Co.**, Tiffon, Ohio. $1,379,918. Truck mounted cranes. Tiffon. Army Mobility Equipment Center, St. Louis.

—**International Harvester Co.**, Melrose Park, Ill. $1,597,358. 91 diesel engine driven loaders. Libertyville, Ill. Army Mobility Equipment Center, St. Louis.

—**Goodyear Tire & Rubber Co.**, Akron, Ohio. $2,376,139. Track shoe assemblies and pods for the M108 and M109 combat vehicles. Muncie, Ind. Army Tank Automotive Center, Warren, Mich.

—**Standard Products Co.**, Cleveland, Ohio. $2,482,738. Track shoe assemblies for the M108 and M109 combat vehicles. Port Clinton, Ohio. Army Tank Automotive Center, Warren, Mich.

—**Fruehauf Corp.**, Fullerton, Calif. $3,529,512. 15-ton amphibious lighters. Fullerton. Army Mobility Equipment Center, St. Louis.

—**General Time Corp.**, Stamford, Conn. $4,574,946. Ordnance items. Stamford, Conn. and Euclid, Ohio. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Boeing Co.**, Morton, Pa. $1,363,476. Components for the CH-47 helicopter. Morton. Army Aviation Materiel Command. St. Louis.

3—**MacDonald and Kruse, Inc., and Huntington Engineering & Construction Co.**, Montrose, Calif. $5,392,103. Work on Los Angeles County Drainage Area Project. Industry, Calif. Engineer Dist., Los Angeles.

—**Canadian Commercial Corp.**, Ottawa, Canada. $1,320,000. Doppler navigation sets (AN/ASN–64) and components (AN/APN–168). Ottawa. Army Electronics Command, Fort Monmouth, N.J.

4—**Dravo Corp.**, Pittsburgh, Pa. $13,187,829. Work on Arkansas River and Tributaries, Arkansas and Oklahoma Project. Fort Smith, Ark. Engineer Dist., Los Angeles.

—**Kaiser Jeep Corp.**, Toledo, Ohio. $1,287,889. 5-ton trucks with government furnished engines. South Bend, Ind. Army Mobility Command, Warren, Mich.

—**RCA**, Camden, N.J. $1,208,400. Light weight portable radio sets and repair parts. Camden. Army Electronics Command, Fort Monmouth, N.J.

5—**Philco Corp.**, Philadelphia. $10,000,000. Phase II of an Integrated Wide Band Communications System. Philadelphia. Army Electronics Command, Fort Monmouth, N.J.

—**Page Communications Engineers, Inc.**, Washington, D.C. $20,000,000. Work on Phase II of an Integrated Wide Band Communications System. Washington, D.C. Army Electronics Command, Fort Monmouth, N.J.

7—**ITT Corp.**, Nutley, N.J. $3,170,125. Repair parts for the radio network system, Tropospheric Army Communication System. Nutley. Army Electronics Command, Fort Monmouth, N.J.

—**Fegles Construction Co.**, Minneapolis. $2,930,000. Construction of a contaminated waste red water disposal facility and erection of an administrative support facility at the Joliet Army Ammunition Plant, Joliet, Ill. Engineer Dist., Chicago.

8—**Remington Arms Co.**, Bridgeport, Conn. $14,980,751. 5.56 and 7.62mm ammunition. Independence, Mo. Ammunition Procurement and Supply Agency, Joliet, Ill.

—**Drillmation, Inc.**, Centerline, Mich. $1,657,113. Bolts for M2 carbines. Centerline. Springfield Armory, Mass.

9—**Canadian Commercial Corp.**, Ottawa, Canada. $1,340,567. Radio Sets. Grandby, Quebec, Army Electronics Command, Philadelphia.

10—**Fairchild Space and Defense Systems, division of Fairchild Camera and Instrument Corp.**, Syosset, N.Y. $1,512,115. Ordnance items. Syosset. Ammunition Procurement & Supply Agency, Joliet, Ill.

11—**General Electric**, Burlington, Vt. $4,258,000. Repair parts for M61A1 20mm guns and XM12 armament pods. Burlington. New York Procurement Detachment.

—**Coath and Goss**, Chicago. $1,928,872. Rehabilitation and modification of buildings for the Fifth Army Headquarters, Fort Sheridan, Ill. Engineer Dist., Chicago.

—**Grumman Aircraft Engineering Corp.**, Beth Page, N.Y. $2,575,415. Modernization of OV–1C aircraft. Stuart, Fla. and Beth Page. Army Aviation Command, St. Louis.

14—**Cadillac Gage Co.**, Warren, Mich. $1,125,266. Bolts for the M2 carbine. Warren. Springfield Armory. Springfield, Mass.

—**RCA**, Camden, N.J. $17,000,000. Classified electronics equipment. Camden. Army Electronics Command, Fort Monmouth, N.J.

—**Cubic Corp.**, San Diego, Calif. $1,442,582. Two Sequential Collation of Range ground stations. San Diego. Engineer Research and Development Laboratories, Fort Belvoir, Va.

15—**Firestone Tire & Rubber Co.**, Akron, Ohio. 4,869,341. Rubber track shoe assemblies (T107) for the M88 vehicle. Noblesville, Ind. Army Tank Automotive Center, Warren, Mich.

—**Sperry Rand Corp.**, Bristol, Tenn. $1,422,552. Fuzes for the PERSHING weapons system. Bristol. Picatinny Arsenal, Dover, N.J.

—**Hughes Aircraft**, Fullerton, Calif. $5,888,450. Satellite communications terminals (AN/MSC–46) (MARK–1B) together with equipment compliance reports and system summaries. Fullerton. Army Electronics Command, Fort Monmouth, N.J.

—**Olin Mathieson Chemical Corp.**, New York City. $7,316,900. Reactivation of production facilities for production of ordnance items and for operation and maintenance activities at Badger Army Ammunition Plant, Baraboo, Wis. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Altech, Inc.**, Parkersburg, W. Va., $1,497,232. Tank and pump units. Elizabeth, W. Va. Army Mobility Equipment Center, St. Louis.

16—**Kasler Corp. and Gordon H. Hall, Inc.**, San Bernardino, Calif. $2,576,790. Work on the San Gabriel River Channel Project. Bellflower, Calif. Engineer Dist., Los Angeles.

—**Dow Chemical Corp.**, Madison, Ill. $1,704,281. Manufacture of airfield aluminum landing mats. Kansas City, Mo. and Madison. Army Aviation Command, St. Louis.

—**Atlantic Research Corp.**, West Hanover, Mass. $3,000,000. A classified quantity of ordnance items. West Hanover. Picatinny Arsenal, Dover, N.J.

17—**Western Contracting Corp.**, Sioux City, Iowa. $1,237,830. Work on the Chesapeake and Delaware River Canal Project. Between Chesapeake City and Welch Point, Md. Engineer Dist., Philadelphia.

—**California Stevedore and Ballast Co.**, San Francisco. $26,448,133. Stevedoring and terminal services for the period of March 1, 1966 through Feb. 29, 1968. Oakland, Calif. Western Area Military Traffic Management Terminal Services, Oakland, Calif.

—**Collins Radio Co.**, Richardson, Tex. $3,800,000. Radio sets (AN/ARC–54). Richardson. Army Electronics Command, Fort Monmouth, N.J.

—**Matson Terminals, Inc.**, San Francisco. $14,868,416. Stevedoring and terminal services for the period of March 1, 1966 through Feb. 29, 1968. Oakland and Alameda, Calif. Western Area, Military Traffic Management Terminal Services, Oakland, Calif.

18—**University of Illinois**, Urbana, Ill. $1,200,000. An additional 12 months work on a scientific research program. Urbana. Army Electronics Command, Fort Monmouth, N.J.

—**Electronics Modules Corp.**, Timonium, Md. $1,500,000. Classified electronic components. Timonium. Army Electronics Command, Fort Monmouth, N.J.

—**Marvel Mfg. Co.**, Washington, D.C. $1,069,533. Various propeller and rotor blade balancing kits for fixed and rotary wing aircraft. Caldwell, N.J. Army Aviation Materiel Command. St. Louis.

—**Standard Container, Inc.**, Montclair, N.J. $1,988,985. Boxes for packaging ordnance items. Homerville, Ga. Frankford Arsenal, Philadelphia.

—**Magnavox Co.**, Urbana, Ill. $1,675,000. Maintenance items for radio sets (AN/VRC–12). Urbana. Army Electronics Command, Fort Monmouth, N.J.

—**Remington Arms Co.**, Bridgeport, Conn. $4,904,984. Carton packed 5.6mm cartridges. Bridgeport. Frankford Arsenal, Philadelphia.

21—**Sperry Rand Corp.**, New York City. $2,096,517. Loading, assembling and packing ordnance items. Shreveport, La. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**International Harvestor Co.**, Washington, D.C. $1,862,030. Various types of tank trucks. Birmingham, Ala. Army Tank Automotive Center, Warren, Mich.

—**Ford Motors**, Dearborn, Mich. $1,068,690. Tank trucks of various types. Dearborn. Army Tank Automotive Center, Warren, Mich.

—**A. O. Smith Corp.**, Chicago. $8,415,119. Ordnance items. Waco, Texas and Milwaukee, Wis. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Machlett Laboratories Corp.**, Springdale, Conn. $1,000,000. Classified amount of image intensifier assemblies. Springdale. Army Electronics Command, Fort Monmouth, N.J.

23—**Chrysler Motors**, Detroit. $2,732,813. Cargo pickup trucks. Warren, Mich. Army Tank Automotive Center, Warren, Mich.

—**Ford Motors**, Dearborn, Mich. $2,146,544. Cargo pick-up trucks. Dearborn. Army Tank Automotive Center, Warren, Mich.

—**Olin Mathieson Chemical Corp.**, New York City. $2,104,040. Ordnance items. Charlestown, Ind. Ammunition Procurement & Supply Agency, Joliet, Ill.

24—**Raytheon Co.**, Norwood, Mass. $3,950,005. Communications equipment. Norwood. Army Electronics Command, Philadelphia.

—**General Motors**, Detroit. $2,355,005. Diesel engines for the M548 vehicle. Detroit. Army Tank Automotive Center, Warren, Mich.

—**American Machine & Foundry Co.**, Brooklyn, N.Y. $5,614,433. Ordnance items. Garden City, N.Y. and St. Paul, Minn. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Servel, Inc., Burgess Battery Co. Division**, Freeport, Ill. $2,255,653. Batteries for portable radio sets. Freeport. Army Electronics Command, Fort Monmouth, N.J.

—**ACF Industries, Inc.**, St. Louis. $1,078,650. Ordnance items. Olivette, Mo. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**General Dynamics**, Rochester, N. Y. $1,800,000. Radio teletypewriter sets. Rochester. Army Electronics Command, Philadelphia.

25—**Harvey Aluminum** Sales, Inc., Torrance, Calif. $6,533,279. Loading, assembling, and packing of ordnance items. Milan, Tenn. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Holliday Construction Co.**, Greenville, Ga. $1,031,274. Work on the West Point Dam and Reservoir, Georgia and Alabama Project. West Point, Ga. Engineer Dist., Savannah, Ga.

—**Western Electric Co.**, New York City. $2,240,000. Improved modification kits for the NIKE HERCULES weapon system. Burlington, N.C. Army Missile Command, Redstone Arsenal, Ala.

—**American Machine & Foundry Co.**, Brooklyn, N.Y. $1,896,847. Fin assemblies for ordnance items. St. Paul, Minn. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**R. G. LeTourneau, Inc.**, Long View, Tex. $7,140,015. 750-pound bomb parts, fin assemblies and packing crates. Long View. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Maxson Electronic Corp.**, Great River, N. Y. $1,377,848. Components for 20mm cartridges. Macon, Ga. Frankford Arsenal, Philadelphia.

—**Amron Corp.**, Waukesha, Wis. $1,110,518. 40mm cartridge cases and special tooling. Waukesha. Ammunition Procurement & Supply Agency, Joliet, Ill.

28—**FMC Corp.**, New York City. $3,710,992. Classified ammunition. Newport, Ind. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Canadian Commercial Corp.**, Ottawa, Ontario, Canada. $2,708,151. Advance production engineering for the utility carrier (XM571) and related kits. Montreal, Quebec. Army Tank Automotive Center, Warren, Mich.

—**General Electric**, Utica, N.Y. $2,000,000. Classified electronic equipment. Utica. Army Electronics Command, Fort Monmouth, N.J.

—**Specialty Electronics Development Corp.**, Glendale, N.Y. $2,036,713. Telephone sets. Southbridge, Mass. Army Electronics Command, Philadelphia.

—**General Motors**, Detroit. $1,132,600. M114 armored reconnaissance carrier engine and transmission assemblies. Flint, Mich. Army Tank Automotive Center, Warren, Mich.

—**Eugene Luhr and Co., and Midwest Construction Co.**, Nebraska City, Neb. $1,156,957. Work on the Port Arthur Hurricane Flood Protection Project. Port Arthur, Tex. Engineer Dist., Galveston, Tex.

—**Beech Aircraft Corp.**, Wichita, Kan. $1,809,850. Guided missile targets. Wichita. Army Missile Command, Huntsville, Ala.

NAVY

1—**Beech Aircraft Corp.**, Wichita, Kan. $2,078,500. KD2B aerial targets. Wichita. Bureau of Naval Weapons.

—**EDO Corp.**, College Point, N.Y. $1,071,888. Field change kits to improve the performance of sonar equipment used onboard submarines. College Point. Navy Supply Center, Norfolk, Va.

—**Poloron Products**, New Rochelle, N.Y. $1,563,835. Fin assemblies used with the MK 82 MOD 1 general purpose bomb. Scranton, Pa. Navy Ships Parts Control Center, Mechanicsburg, Pa.

—**P&H Construction Co.**, Evansville, Ind. $1,035,711. Construction of an industrial annex at Naval Avionics Facility, Indianapolis, Ind. Dir., Midwest Div., Bureau of Yards and Docks.

—**Firestone Tire & Rubber Co.**, Akron, Ohio. $1,391,500. Rubber inflatable life rafts for use on MSTS vessels. Akron. Navy Aviation Supply Office, Philadelphia.

—**Westinghouse Electric Corp.**, Baltimore, Md. $20,520,000. Classified development effort related to Fleet Ballistic Missile Weapon System. Baltimore. Special Project Office.

2—**Southern Stevedoring Corp.**, Norfolk, Va. $2,175,628. Stevedoring services at the Naval Supply Center, Norfolk, Va. Naval Supply Center, Norfolk, Va.

3—**Litton Systems, Inc.**, Woodland Hills, Calif. $7,691,939. Airborne navigation computer set components. Salt Lake City, Utah; Duluth, Minn. and Woodland Hills. Bureau of Naval Weapons.

—**Westinghouse Electric**, Baltimore, Md. $13,498,698. Airborne radar sets for the Air Force. Baltimore. Bureau of Naval Weapons.

—**Vitro Corporation of America**, Silver Spring, Md. $10,196,775. Engineering services for the TERRIER, TARTAR and TALOS missile systems. Silver Spring. Bureau of Naval Weapons.

4—**Otis Elevator Co.**, Stamford, Conn. $3,543,900. Sheridan/Shillelagh weapon system trainers. Stamford. Naval Training Device Center, Port Washington, N.Y.

—**Grumman Aircraft Engineering Corp.**, Bethpage, N.Y. $4,400,000. Support FY 66 procurement of A–6A aircraft. Bethpage. Bureau of Naval Weapons.

—**Curtiss-Wright Corp.**, Wood-Ridge, N.J. $1,462,818. Engineering services for Navy and Air Force J-65 aircraft engines. Wood-Ridge. Bureau of Naval Weapons.

—**Norair Engineering Corp.**, Washington, D.C. $1,578,000. Construction and installation of the chambers for the Deep Submergence Research Complex, Navy-Marine Engineering Laboratory, Annapolis, Md. Dir., Chesapeake Div., Bureau of Yards and Docks.

7—**Admiral Corp.**, Chicago. $3,854,440. Components for the AN/ARC–5 radio set. Chicago. Navy Purchasing Office.

—**Boeing Co.**, Morton, Pa. $5,393,920. Rotor blades for CH/UH–46A helicopters. Morton. Navy Aviation Supply Office, Philadelphia.

—**Westinghouse Electric**, Pittsburgh, Pa. $11,002,470. Design and furnish reactor plant components for nuclear powered ships. Pittsburgh. Bureau of Ships.

8—**Columbia University**, New York City. $1,650,000. Additional marine geophysics research. New York City, Bermuda, and Atlantic islands. Office of Naval Research, Washington, D.C.

—**United Aircraft**, East Hartford, Conn. $1,361,311. Spare parts for aircraft engines used in P-2V5 and T-2B aircraft. East Hartford. Navy Aviation Supply Office, Philadelphia.

—**Sperry Gyroscope Co.**, Great Neck, N.Y. $2,695,000. Engineering services for TERRIER missile fire control radar sets. Great Neck. Bureau of Naval Weapons.

—**International Telephone & Telegraph Corp.**, Camden, Ark. $1,317,467. Portable transmitters-receivers and accessory kits. Camden. Bureau of Ships.

—**Philadelphia Gear Corp.**, King of Prussia, Pa. $1,465,590. Elevation drive assemblies for the AN/SPG–55A/B radar and installation tools. King of Prussia. Navy Purchasing Office, Los Angeles.

—**Garrett Corp., AiResearch Mfg. Co. div.**, Phoenix, Ariz. $1,699,852. Spare parts for gas turbines. Phoenix. Navy Aviation Supply Office, Philadelphia.

9—**Boeing Co.**, Morton, Pa. $3,667,977. Spare parts for CH/UH–46 helicopters. Morton. Navy Aviation Supply Office, Philadelphia.

—**United Aircraft**, East Hartford, Conn. $2,589,895. $2,110,857. Miscellaneous spare parts for J75–P17/19/19W engines for F–105 and F–106 aircraft. East Hartford. Navy Aviation Supply Office, Philadelphia.

10—**Edo Corp.**, College Point, N.Y. $22,906,337. Sonar sets for installation in naval surface ships. College Point. Bureau of Ships.

—**Curtiss-Wright Corp.**, Wood-Ridge, N.J. $1,099,957. Spare parts for jet engines used in A–4B/C and AF–1E aircraft. Wood-Ridge. Navy Aviation Supply Office, Philadelphia.

—**Douglas Aircraft**, Long Beach, Calif. $2,070,000. Bomb release rack systems for Navy aircraft. Torrance, Calif. Bureau of Naval Weapons.

11—**Southern Extrusions Inc.**, Magnolia, Ark. $1,689,380. Aluminum matting extrusions. Magnolia. Naval Air Engineering Center, Philadelphia.

—**May Aluminum Inc.**, El Campo, Tex. $2,376,950. Fabrication of aluminum matting extrusions. El Campo. Naval Air Engineering Center, Philadelphia.

—**Washington Aluminum Co.**, Baltimore, Md. $1,183,850. Fabrication of airfield matting pallets and mat assemblies. Baltimore. Naval Air Engineering Center, Philadelphia.

—**Aluminum Company of America**, Pittsburgh, Pa. $1,813,955. Aluminum matting extrusions. Cressona, Pa. and Lafayette, Ind. Naval Air Engineering Center, Philadelphia.

—**Ford Instrument Co.**, Long Island City, N.Y. $2,380,000. Installment funding for gun fire control systems. Long Island City. Bureau of Naval Weapons.

14—**Louis Allis Co.**, Milwaukee, Wis. $1,313,520. Additional power supply units for surface ship sonar systems. Milwaukee. Bureau of Ships.

—**Westinghouse Electric**, Pittsburgh, Pa. $3,272,960. Design and furnish reactor plant components for nuclear powered ships. Pittsburgh. Bureau of Ships.

15—**Grumman Aircraft Engineering Corp.**, Bethpage, N.Y. $13,600,896. Increase of long lead time effort in support of FY 66 procurement of A–6A aircraft. Bethpage. Bureau of Naval Weapons.

—**Bendix Corp.**, North Hollywood, Calif. $1,645,628. Radar altimeter systems. North Hollywood. Bureau of Naval Weapons.

—**Clevite Corp.**, Cleveland, Ohio. $2,900,000. Research & development on a guidance and homing control system adaptable to torpedoes. Cleveland. Bureau of Naval Weapons.

—**Raytheon Co.**, Lexington, Mass. $1,200,000. Research & development work on TARTAR missile control radar sets. Wayland, Mass. Bureau of Naval Weapons.

—**Western Electric Co.**, New York City. $5,724,474. Classified oceanographic research. Whippany, N.J. Navy Purchasing Office, Washington, D.C.

—**American Mfg. Co.**, Fort Worth, Tex. $5,216,400. 500-pound bomb bodies. Fort Worth. Navy Ships Parts Control Center, Mechanicsburg, Pa.

—**American Construction Co.**, Washington, D.C. $2,844,000. Construction of a composite medical facility addition at Andrews AFB, Md. Dir., Chesapeake Div., Bureau of Yards and Docks.

16—**Lockheed Missile and Space Co.**, Sunnyvale, Calif. $2,500,000. Classified work. Sunnyvale. Special Projects Office.

17—**Simplex Wire & Cable Co.**, Newington, N.H. $3,840,500. 1,345 nautical miles of undersea cable. Newington. Navy Purchasing Office, Washington, D.C.

—**Westinghouse Electric**, Pittsburgh, Pa. $2,839,000. Designing and furnishing of reactor plant components for naval nuclear powered ships. Pittsburgh. Bureau of Ships.

—**Farmer Tool and Supply Corp.**, Denver, Colo. $1,153,400. Wing and rolleron assemblies for SIDEWINDER missiles. Denver. Navy Propellant Plant, Indian Head, Md.

—**Kelsey-Hayes Co.**, Philadelphia. $1,167,145. 2.75 rocket components. Philadelphia. Navy Ships Parts Control Center, Mechanicsburg, Pa.

18—**Clevite Corp.**, Cleveland, Ohio. $9,262,133. Shipboard sonar systems, including repair parts and engineering services. Cleveland. Bureau of Ships.

21—**United Aircraft Corp.**, Stratford, Conn. $2,494,514. Spare parts for CH–53A helicopters. Stratford. Navy Aviation Supply Office, Philadelphia.

—**Astro-Science Corp.**, El Monte, Calif. $2,321,236. Recorder/reproducers (AN/A–2H–1V). El Monte. Naval Air Development Center, Johnsville, Pa.

—**General Electric**, Washington, D.C. $21,893,258. Main propulsion machinery for nuclear submarines. Lynn, Mass.; Fitchburg, Mass and Schenectady, N.Y. Bureau of Ships.

—**FMC Corp.**, San Jose, Calif. $12,373,715. Detailed design, construction, test and evaluation of prototype assault amphibian personnel carriers (LVTPX). San Jose. Bureau of Ships.

—**Bendix Corp.**, York, Pa. $2,108,974. Target detecting devices for TALOS missile systems. York. Navy Purchasing Office, Washington, D.C.

—**Poloron Products, Inc.**, New Rochelle, N.Y. $1,037,905. Bomb fin assemblies. Scranton, Pa. Navy Ships Parts Control Center, Mechanicsburg, Pa.

—**Hughes Aircraft**, Culver City, Calif. $16,000,000. Additional funding for the PHOENIX missile system for FY 66. Culver City. Bureau of Naval Weapons.

—**International Telephone and Telegraph Corp.**, Harrisburg, Pa. $1,561,198. Lead electrical wire for 2.75-inch rockets. Duncannon, Pa. Navy Ships Parts Control Center, Mechanicsburg, Pa.

23—**Hydromatics, Inc.**, Bloomfield, N.J. $1,365,080. Ball valve sets for POLARIS submarines. Bloomfield. Bureau of Ships.

—**Sangamo Electric Co.**, Springfield, Ill. $2-503,218. Sonar sets. Springfield. Bureau of Ships.

24—**Otis Elevator Co.**, Stamford, Conn. $3,194,559. Fire trainer units for the XM–35 (Sheridan Weapon System). Stamford. Naval Training Device Center, Port Washington, N.Y.

25—**York Corp.**, York, Pa. $1,324,746. Centrifugal air-condition units for naval ships. York. Bureau of Ships.

—**Bethlehem Steel Corp.**, San Francisco. $1,907,500. Completion of reactivation work on the Military Sea Transportation Service (MSTS) aircraft ferry USNS KULA GULF (T–AKV 8). San Francisco. Commander, MSTS, Pacific Area, Fort Mason, Calif.

AIR FORCE

1—**Northrop Corp.**, Hawthorne, Calif. 21,805,000. F–5 aircraft for allied nations under the Military Assistance Sales Program. Hawthorne. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

—**Hughes Aircraft**, Culver City, Calif. $1,200,000. Missile launchers for the F–4 aircraft. Culver City. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

—**Sperry Rand Corp.**, Charlottesville, Va. $5,595,960. Radar sets for C–141, HC–130H and WC–135 aircraft. Charlottesville. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

—**Garrett Corp.**, Phoenix, Ariz. $1,155,019. Starter and valve assemblies for C–141 aircraft. Phoenix. Aeronautical Systems Div. (AFSC), Wright Patterson AFB, Ohio.

—**Hughes Aircraft**, Culver City, Calif. $2,600,000. Work on an air-to-surface missile guidance program. Culver City. Systems Engineering Group, Research & Development Div. (AFSC), Wright-Patterson AFB, Ohio.

—**AVCO Corp.**, Wilmington, Mass. $2,000,000. Re-entry vehicle technology. Wilmington. Ballistic Systems Div. (AFSC), Norton AFB, Calif.

2—**Thiokol Chemical Corp.**, Bristol, Pa. $1,180,000. Research & development on Stage I MINUTEMAN motors. Brigham City, Utah. Ballistic Systems Div. (AFSC), Norton AFB, Calif.

3—**General Electric**, West Lynn, Mass. $2,782,675. $2,500,000. Production of T–58 aircraft engines and component improvement work. West Lynn. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

—**Kollsman Instrument Corp.**, Elmhurst, N.Y. $1,317,382. Spare parts for mapping and surveying systems. Elmhurst. Warner Robins Air Materiel Area (AFLC), Robins AFB, Ga.

—**Olin Mathieson Chemical Corp.**, New York City. $1,858,088. Rocket propellant. Saltville, Va. San Antonio Air Materiel Area (AFLC), Kelly AFB, Tex.

—**ITT Research Institute**, Chicago. $4,695,000. Operation of an electromagnetic analysis center for space studies. Annapolis, Md. Electronic Systems Div. (AFSC), L.G. Hanscom Field, Mass.

4—**Consolidated Diesel Electric Co.**, Stamford, Conn. $2,922,159. Production of 211 ground power generators. Stockton, Calif. Sacramento Air Materiel Area (AFLC), McClellan AFB, Calif.

—**Aerojet General Corp.**, Sacramento, Calif. $4,955,185. Advanced storable liquid propellant rocket engines. Sacramento. Air Force Flight Test Center (AFSC), Edwards AFB. Calif.

7—**Boeing Co.**, Seattle, Wash. $8,022,267. Modernization of MINUTEMAN missiles. Knob Noster, Mo. Ballistic Systems Div. (AFSC), Norton AFB, Calif.

8—**Fairchild Hiller Corp.**, Hagerstown, Md. $2,100,000. Modification of C–123 aircraft. Hagerstown. Warner-Robins Air Materiel Area (AFLC), Robins AFB, Ga.

—**AVCO Corp.**, Wilmington, Mass. $5,900,000. Design, development, test and evaluation of ballistic penetration aids. Ballistic Systems Div. (AFSC), Norton AFB, Calif.

—**A. J. Industries, Inc.**, El Monte, Calif. $1,122,000. Production of fuselage fuel tanks for F-105 aircraft. El Monte. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

—**Ling-Temco-Vought, Inc.**, Greenville, Tex. $2,103,500. Modification of C-130 aircraft. Greenville. Aeronautical Systems. Div. (AFSC), Wright-Patterson AFB, Ohio.

9—**Hazeltine Corp.**, Little Neck, N.Y. $1,304,834. Production of communications equipment. Little Neck. Warner-Robins Air Materiel Area (AFLC), Robins AFB, Ga.

—**Stromberg Carlson Corp.**, Rochester, N.Y. $1,300,100. Production and installation of telephone communications equipment. Rochester. Oklahoma City Air Materiel Area (AFLC), Tinker AFB, Okla.

—**Viewlex, Inc.**, Holbrook, N.Y. $2,413,218. Production of portable photographic labs with related technical data and spare parts. Holbrook. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

—**General Dynamics**, San Diego, Calif. $1,032,000. Work on ATLAS/AGENA space boosters. San Diego. Space Systems Div. (AFSC), Los Angeles.

—**General Dynamics**, San Diego, Calif. $3,113,500. Modification services for 23 ATLAS missiles to be used in a re-entry vehicle development program. San Diego. Ballistic Systems Div. (AFSC), Norton AFB, Calif.

10—**Lear Siegler, Inc.**, Grand Rapids, Mich. $3,508,516. Production of aircraft bombing computers. Grand Rapids. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

11—**General Precision, Inc.**, Little Falls, N.J. $1,160,000. Production of ground support equipment for the C–141 navigational computer. Little Falls. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

—**Goodyear Tire & Rubber Co.**, Akron, Ohio. $1,926,605. Production of wheel and brake assemblies for F–4 aircraft. Akron. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

—**Boeing Co.**, Seattle, Wash. $3,426,200. Modification of K-135 aircraft. Seattle. Ballistic Systems Div. (AFSC), Norton AFB, Calif.

14—**Curtiss Wright Corp.**, Wood-Ridge, N.J. $6,000,000. Work on the development of a vectored thrust cruise aircraft engine. Wood-Ridge. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

15—**Aerosonic Corp.**, Clearwater, Fla. $2,194,585. Production of aircraft altimeters. Clearwater. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

—**Aircraft Armaments Inc.**, Cockeysville, Md. $1,424,540. Production of aircraft fault detection equipment. Cockeysville. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

16—**Lockheed Aircraft**, Marietta, Ga. $1,039,847. Spare parts for C–141 aircraft engines. Chula Vista, Calif. Warner Robins Air Materiel Area (AFLC), Robins AFB, Ga.

—**General Electric**, West Lynn, Mass. $36,875,000. Production of aircraft engines for the T–38 and F–5 aircraft. West Lynn. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

17—**North American Aviation**, Canoga Park, Calif. $2,830,000. Jet engines thrust research. Canoga Park. Air Force Flight Test Center (AFSC), Edwards AFB, Calif.

—**Aerojet General Corp.**, Sacramento, Calif. $1,582,945. Production of GENIE rocket motors and related data. Sacramento. Ogden Air Materiel Area (AFLC), Hill AFB, Utah.

—**United Aircraft**, Farmington, Conn. $1,298,215. Research, development and integration of weather observing and forecasting systems. Farmington. Electronic Systems Div. (AFSC), L. G. Hanscom Field, Mass.

—**Douglas Aircraft**, Tulsa, Okla. $6,118,074. Modification and maintenance of B–52 aircraft. Tulsa. Oklahoma City Air Materiel Area (AFLC), Tinker AFB, Okla.

18—**Sylvania Electric Products**, Mountain View, Calif. $1,300,000. Security subsystems for MINUTEMAN wings II and III. Mountain View. Ballistic Systems Div. (AFSC), Norton AFB, Calif.

—**General Dynamics**, San Diego, Calif. $1,900,000. Modification of launch facilities for use in the advanced ballistic re-entry systems program. San Diego. Ballistic Systems Div. (AFSC), Norton AFB, Calif.

—**Lockheed Aircraft**, Marietta, Ga. $10,000,000. Production of C–130 aircraft. Marietta. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

21—**General Electric**, Philadelphia. $7,100,000. Design, development, test and evaluation of the MARK 12 penetration aids system. Philadelphia. Ballistic Systems Div. (AFSC), Norton AFB, Calif.

—**Kollsman Instrument Corp.**, Elmhurst, N.Y. $1,647,411. Spare parts for mapping and survey systems. Elmhurst. Warner Robins Air Materiel Area (AFLC) Robins AFB, Ga.

—**Honeywell, Inc.**, Hopkins, Minn. $1,247,680. Production of components for ordnance items. Hopkins. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

24—**Hycon Mfg. Co.**, Monrovia, Calif. $1,000,000. High altitude aircraft cameras. Monrovia. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

25—**Douglas Aircraft**, Santa Monica, Calif. $5,523,464. Launch support services for various space programs. Vandenberg AFB, Calif. Space Systems Div. (AFSC), Los Angeles.

28—**Westinghouse Electric**, Baltimore, Md. $1,000,000. Design, fabrication and test of day-night television systems for sighting targets. Baltimore. Systems Engineering Group, Research and Technology Div. (AFSC), Wright-Patterson AFB, Ohio.

—**Conductron Corp.**, Ann Arbor, Mich. $1,330,878. Radar flight test program. Ann Arbor. Systems Engineering Group, Research and Technology Div. (AFSC), Wright-Patterson AFB, Ohio.

Classified Info in Press Does Not Mean Materials Is Unclassified

Occasionally, articles in newspapers or trade journals may appear to contain information which is classified. Sometimes these articles purport to be official statements by high-level officials. Other times they may be well conceived but unofficial analyses by technical writers and journalists.

Publication of information does not necessarily mean that it has been declassified. Any comment which appears to be based on official knowledge could compromise classified information.

Anyone finding in the public press, articles which have the appearance of containing classified information, is invited to submit the item to the nearest Army, Navy or Air Force office with which he does business.

The article itself cannot be classified but the transmittal discussing the situation should bear classification markings which show plainly that they are "tentative." The DOD classification guidance must be followed pending receipt of official word.

DOD policy calls for reviewing existing security classifications whenever possibly classified information relating to military matters is made public. This review embraces both the published and related information. The source must be identified or verified. If exposure of classified information has occurred, possible damage must be assessed and precautionary or corrective measures taken within official circles.

Procurement Catalogs Available to Industry

Catalogs containing forecasts of planned major procurements for a twelve-month period in the bearings, metals, fasteners and electrical wire and cable commodities have been published by the Defense Industrial Supply Center (DISC) in Philadelphia, Pa.

The catalogs will be published quarterly to include latest information and are available to interested industries and distributors. They are being published in accordance with the DISC policy of providing the industrial community with as much advanced information as possible for planning purposes. Forecasts are based on the latest available information at the time of publication and are subject to modification.

Copies of specific catalogs may be obtained by writing to the Directorate of Procurement and Production, Defense Industrial Supply Center, 700 Robbins Avenue, Philadelphia, Pa. 19111. The commodities of interest should be specified.

DISC is a field activity of the Defense Supply Agency and purchases industrial type items for the Armed Forces. These items include bearings, block and tackle, rigging and slings, rope, cable and fittings, hardware and abrasive, fasteners, metal bars, sheets and shapes, and electrical wire and cable.

Zero Defects Handbook Published by DOD

DOD Handbook 4155.12–H, "A Guide to Zero Defects," recently came off the press and is now being distributed throughout Government and industry.

The new publication provides guidance for planning, implementing and sustaining Zero Defects programs. It is available for purchase from the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C., for 20 cents.

DEFENSE PRIME CONTRACT AWARDS TO SMALL BUSINESS

(Amounts in Thousands)

	July-Dec. 1965	July-Dec. 1964
Procurement from All Firms ____________	$15,128,683	$11,752,808
Procurement from Small Business Firms _	3,182,265	2,462,213
Percent Small Business _________________	21.0	20.9

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FLARE

NORAD Catalogues 1,000 Objects in Space

The U.S. meteorological satellite, Tiros OT–3, placed in orbit by a three-stage Delta vehicle from Cape Kennedy, Fla., Feb. 3, marked the first time 1,000 objects have been orbiting in space at one time

Shortly after the satellite was placed in orbit it was redesignated ESSA–1 by the National Aeronautics and Space Administration.

Designed primarily to provide continuous data for operational and research meteorological purposes, the satellite is the eleventh in the U.S. Tiros program.

Officials at North American Air Defense Command's (NORAD) Space Defense Center, the agency given the task of catalogueing all man-made objects in space, stated that of the 1,000 objects in space, 971 are orbiting the Earth while 29 are deep space probes.

It has been estimated that by 1970 there will be between 5,000 and 7,000 man-made objects in Earth orbit.

The Space Defense System includes a global network of radar, radio and optical sensors supplying NORAD with tracking information on all satellites while maintaining a complete information catalogue of space vehicles. It determines orbits of space objects, keeps a schedule of satellite positions and predicts future positions.

The Space Defense Center, operated by the Air Defense Command's First Aerospace Control Squadron, has catalogued a total of 1,982 objects, although only 1,000 are still in space. The others have either decayed or have been intentionally deorbited.

They include 209 orbiting payloads—162 belonging to the United States, 41 to Russia, 2 to France, 2 to the United Kingdom and 2 to Canada.

Space debris or junk—the rocket packages and other bits and pieces of vehicles that have come apart—constitute the remaining objects. All of these are catalogued by the Space Defense Center.

The NORAD satellite-tracking system is multi-Service, composed of Air Force, Army, Navy and Canadian Forces Air Defence Command sensors with civilian scientific agencies contributing data on a cooperative basis.

Through the Space Defense Center at Colorado Springs, NORAD exercises operational control of the two main military elements of the system—the Air Force Spacetrack and the Navy Space Surveillance System.

Overclassification of Documents Expensive And Wasteful

Overclassification of documents can be both expensive and wasteful as well as time consuming because of the extra care which must be taken in handling this kind of material.

To save dollars, contractors and agencies are urged to review classified papers in their custody frequently to determine if they are overclassified.

When possible, overclassified material should be downgraded or declassified. If the holder of overclassified material is not authorized to perform this action, it should be referred to the office of origin or to the contracting activity, with reasons and recommendations.

When classified documents are no longer needed — get rid of them. This can be done by returning them to the contracting agency, downgrading or declassifying when authority to do so exists, or destroying them. However, be sure they are disposed in an authorized manner.

Remember, also, when preparing a document that is based on a classified document, the paper doesn't have to be classified unless it actually contains classified information.